The Commonwealth of Massachusetts

NEW BEDFORD STATE TEXTILE SCHOOL

CATALOGUE

1919 - - 1920

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CATALOGUE

New Bedford State Textile School

NEW BEDFORD, MASS.

1919-1920

BOSTON
WRIGHT & POTTER PRINTING CO., STATE PRINTERS
32 DERNE STREET
1919

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OFFICERS OF THE BOARD.

WILLIAM E. HATCH, A.M., *President.*
FREDERIC TABER, *Treasurer.*
JAMES O. THOMPSON, Jr., *Clerk.*

On Behalf of the Commonwealth of Massachusetts.

Term expires June 30, 1921.

LEWIS E. BENTLEY, Former Superintendent, New England Cotton Yarn Company.
WILLIAM E. HATCH, A.M.
CHARLES M. HOLMES, Treasurer, Holmes and Gosnold Mills.
NATHANIEL B. KERR, Vice-President, Butler Mill; Director, New Bedford Cotton Mills Corporation.
JAMES O. THOMPSON, Jr., Agent, New Bedford Cotton Mills Corporation.

Term expires June 30, 1920.

JOHN L. BURTON, Agent, Nashawena Mill.
THOMAS F. GLENNON, Agent, Quissett Mill.
JOSEPH H. HANDFORD, Assessor, city of New Bedford.
JOHN SULLIVAN, Agent, Taber Mill.
FREDERIC TABER, President, Taber Mill.

Term expires June 30, 1919.

WILLIAM O. DEVOLL, Treasurer, Potomska Mill.
CHARLES O. DEXTER, Agent, Beacon Manufacturing Company.
Hon. SAMUEL ROSS, Secretary, Mule Spinners Union.
ABBOTT P. SMITH, Director, Quissett, Taber, New Bedford Cotton Mills Corp., Soule, Butler and Nemasket Mills.

Ex Officiis on the Part of the City of New Bedford.

Hon. CHARLES S. ASHLEY, Mayor.
ALLEN P. KEITH, Superintendent of Schools.

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Machinery Building

ADMINISTRATION AND INSTRUCTION.

ADMINISTRATION.

WILLIAM E. HATCH, A.M.,
President.

FREDERIC TABER,
Treasurer.

MAUD L. CLARK, *Chief Clerk and Bookkeeper.*
ELLEN BROADWEADON, *Clerk and Assistant Bookkeeper.*
IRENE GOULART, *Clerk.*

INSTRUCTION.

Heads of Departments.

WILLIAM SMITH,
Carding and Spinning.

THOMAS YATES,
Warp Preparation and Weaving.

SAMUEL HOLT,
Designing.

FRANK PAYTON,
Knitting.

EVERETT H. HINCKLEY, S.B.
Chemistry and Dyeing.

MORRIS H. CROMPTON,
Engineering and Mechanical Drafting.

Instructors.

James P. Brown,
Carding and Spinning.

Albert H. Grimshaw, Abram Brooks, Owen J. Mullaney,
Chemistry, Dyeing and Finishing.

John F. Judge,
Engineer.

Antone Santos, Daniel B. Osborne,
Firemen and Watchmen.

Oscar E. Johnsen,
Head Janitor.

Edwin Johnson, Alfred Makin,
Assistant Janitors.

The president and heads of departments constitute the faculty of the school.

The day instructors serve both day and evening.

ASSISTANT EVENING INSTRUCTORS.

Carding and Spinning.

Frank Buckley.
Clifford E. Cornell.[1]
John F. Glennon.[2]
Frank Holden.
Andrew W. Macy.
John Perrin.[2]
Harry L. Ray.
Daniel C. Stephenson.

Warp Preparation and Weaving.

William Acomb.
Peter Czarnota.
Frederick W. Holt.
Peter J. Macy.
Patrick J. Mahoney.
Antonio R. Martin.
Joseph Niedzwiecki.
John Reynolds.
George Southworth.
Konstanty Strzepek.[2]

Warp Drawing.

Amelia Barber.
Hilda Kenworthy.[1]

Mill Calculations.

Joseph H. Potter.

Cost Finding.

Howard B. Whitney.

Designing.

William Acomb.[1]
Jean C. Uberti.[2]

Mechanical Drafting.

Wallace B. Baylies.
Lester E. Cook.
William L. O'Brien.

Electrical Engineering.

Arthur M. Kelley.

Steam Engineering.

Amos G. Taylor.

Machine-shop Practice.

Frank M. Dantsizen.
Simeon B. Livesley.
Harry J. Riding.

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[1] Spring term only.
[2] Fall term only.

CALENDAR.

1919.

JULY.

Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.
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AUGUST.

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OCTOBER.

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1920.

JANUARY.

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JUNE.

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Recitation Building

SCHOOL CALENDAR, 1919-20.

Fall Term, 1919.

Tuesday, September 9, at 9 A.M. Entrance examinations for day students.

Wednesday, September 10. Beginning of first semester for day students.

Thursday, September 18, and Friday, September 19, from 7 to 9 P.M. Enrollment of evening students at the school.

Monday, September 22, at 7.30 P.M. Beginning of first term for evening students.

Wednesday, November 26, 12 M., to Monday, December 1. Thanksgiving recess.

Monday, December 15, Tuesday, December 16, Thursday, December 18, Friday, December 19. Examinations for evening students.

Friday, December 19. End of first term for evening students.

Saturday, December 20, 1919, to Monday, January 5, 1920, Christmas recess.

Spring Term, 1920.

Friday, January 2, from 7 to 9 P.M. Enrollment of evening students for second term.

Monday, January 5, at 7.30 P.M. Beginning of second term for evening students.

Monday, February 1, to Friday, February 6, inclusive. Midyear examinations for day students.

Friday, February 6. End of first semester for day students.

Monday, February 9. Beginning of second semester for day students.

Monday, March 29, Tuesday, March 30, Thursday, April 1, Friday, April 2. Examinations for evening students.

Friday, April 2. End of second term for evening students.

Saturday, April 3, to Monday, April 12. Spring recess.

Tuesday, June 8, to Friday, June 11, inclusive. Final examinations for senior class.

Monday, June 14, to Thursday, June 17, inclusive. Final examinations for first and second year day classes.

Wednesday, June 16. First entrance examinations for school year.

Thursday, June 17. End of school year and graduating exercises.

New Bedford State Textile School.

THE LOCATION OF THE SCHOOL.

The school is situated in the center of the city of New Bedford, Mass., on the main car line of the city, which connects the mill districts, and is readily accessible to mill operatives who attend the evening sessions of the school. It is near the residential part of the city, and is therefore conveniently situated for non-resident pupils who take up a temporary residence in the city.

New Bedford is an especially suitable location for an institution of this character. It is the largest cotton manufacturing city of fine yarns and fancy woven fabrics and novelties in the country. Its spindles number 3,385,040, and looms, 55,182; capital invested, $50,666,300, and employees, 38,860.

High-grade combed yarns are produced in New Bedford to a greater extent than in any other city, while the mills are engaged in the manufacture of fine shirtings, muslins, lawns, sateens, lenos, checks, piqués and other fancy fabrics to an extent unknown elsewhere. New Bedford's great advantage in this respect can be attributed principally to the fact that her mills are nearly all of recent construction, with the most improved and up-to-date equipment. The environment of these mills is in itself a benefit to the students who select the New Bedford Textile School as the institution in which to learn the mill business, as they have opportunity to observe their construction and operation, and to find employment in them during the long summer vacations and upon finishing their course in the school.

New Bedford is within short distance of Hopedale, Whitinsville, Hyde Park, Providence, Pawtucket, Woonsocket, Taunton and other large cotton machinery centers.

It is one of the healthiest of the manufacturing cities in the United States. Picturesquely situated on the extreme south shore of Massachusetts, it enjoys one of the mildest winter climates in New England, and thus offers peculiar residential advantages for non-resident students.

THE BUILDINGS.

The school is housed in two separate buildings connected by a tunnel in the basement and by covered bridges overhead. They are constructed of red brick with trimmings of Indiana sandstone. They are classified as the machinery building and the recitation building.

The first now comprises the original building, erected in 1898–99, and the first two additions, erected in the years 1901–02 and 1905, respectively. This building is 164 feet in length, with an average depth of 77.3 feet. It is three stories high, with basement under most of it, and contains a floor space of 46,600 square feet. In it are situated the administration offices, the power house and all the departments comprised in a cotton yarn and cotton cloth mill, as shown by the cuts distributed throughout this catalogue. In addition, it has two large thoroughly equipped rooms for instruction in the art of knitting, both for hosiery and underwear, also shown in cuts.

The recitation building was completed and occupied in the fall of 1911. It consists of a main building 108 by 93 feet 6 inches, three stories high, with a deep well-lighted basement under the whole of it, and contains 40,392 square feet of floor space. It also has an annex 68 feet 3 inches long by 19 feet 3 inches deep, one story high, with basement, and contains 2,634 square feet of floor space. This annex is used as an experimental laboratory and as a storeroom for chemical supplies.

The main building, besides being equipped with recitation and lecture rooms of various sizes, has a thoroughly equipped chemical laboratory, dyeing and finishing rooms, engineering laboratories, a commodious machine shop, draft-

Assembly Hall

ing rooms, a designing room especially fitted, an exhibition room, and an assembly hall that will seat 400 persons.

Both structures are of the slow-burning mill construction type, approved by the leading fire insurance associations and mill engineers, while the general equipment of the plant is also illustrative of the best methods of lighting, heating, ventilating, humidifying and fire-protecting mills. Great attention has been paid to the planning and arranging of these buildings for the school, to make them suitable for the purposes of imparting textile instruction, and in order that the machinery building should give an object-lesson in cotton mill engineering.

Power and light are now purchased from the local electric power company, and the school supplies its own heat and the steam needed in its finishing plant. The fire protection was designed and installed by the General Fire Extinguisher Company of Providence, R. I., the well-known Grinnell sprinkler being used. The American Moistening Company installed a complete humidifying apparatus. The whole equipment is approved by the Massachusetts State inspectors of public buildings.

THE SCHOOL AND ITS PURPOSE.

The Legislature of the Commonwealth of Massachusetts, in the act under which the Trustees of the New Bedford Textile School were incorporated, gives as the purpose of the incorporation that of establishing and maintaining a textile school for instruction in the theory and practical art of textiles and kindred branches of industry.

As New Bedford is primarily a cotton manufacturing city, this school confines itself principally to instruction in the cotton branch of the textile industry, and seeks to perfect itself in this line. Its course of instruction is arranged to subserve the interests of two general classes of students: (1) day students, — those who give their whole time for two or three years to acquiring the theory as well as the practice of cotton manufacturing in all its details, from the raw

cotton to the finished fabric, and also have instruction in the scientific principles which underlie the construction of the machinery and its operation, and the artistic principles which are involved in the production of desirable and ornamental fabrics; (2) evening students, — those who are employed in the mills during the day and who, by attending the Textile School evenings, are able to learn other phases of the industry from that in which they are employed, or to perfect themselves in their special lines of work, and become more efficient workmen. The courses of instruction for these two classes of students are given fully on other pages of this catalogue.

The whole of the machinery in the school is absolutely modern, being constructed especially for the school. It is all high grade, has latest improvements, and is especially built to afford facilities for all kinds of experimental work, and represents all the leading types of machines from the best builders in the United States, and several English builders.

There is no mill in which there is so large a variety of machinery as in the New Bedford Textile School. This consequently affords the student a better opportunity to become acquainted with various machines and methods than could be found in any one manufacturing establishment.

Each instructor in the day school is a man who is thoroughly conversant with the work of the department under his charge by thorough training and long experience. Each one has charge of the work in his department at night also, assisted by experienced assistants from the mills, many of whom are graduates of this school.

The school went into operation in the fall of 1899, and the first class was graduated in 1900. The regular courses were one year in length for the first few years, but were afterwards increased to three years. Special shorter courses are given, however, for which certificates are granted.

For nineteen years the school was a semi-private institution, but supported by appropriations made each year by

the State and by the city of New Bedford. It was managed by a Board of Trustees, two appointed by the Governor of the Commonwealth, two representing the city (the mayor and the superintendent of schools, ex officiis), and twenty organized under the general statute by which the school was founded, a perpetual body, with power to fill vacancies other than the four created for and representing the Commonwealth and city.

On July 1, 1918, it became a State institution by an act amending the State Constitution. It is still maintained with appropriations made by the State and city.

It is managed by a Board of Trustees consisting of seventeen members, fifteen of whom are appointed by the Governor of the Commonwealth, and two, the mayor and the superintendent of schools, ex officiis, representing the city. Most of the trustees are men who either are or have been connected actively with the manufacture of cotton textiles.

The number of individual students attending the school since its opening is 7,938; the number graduated, 2,299. Many evening students who attend regularly do not take the examinations, and therefore do not appear as graduates, though they may have had a good record as students, especially in practice. This shrinking from examinations is natural, for many of them have little or no command of English, or are not accustomed to examinations.

A large number of those who do not appear as graduates, however, are benefited by the instruction given in the school, and have acquired a knowledge and skill that have enabled them to rise in the industry and improve their financial and social condition.

DAY CLASSES.

The regular day courses of the school are as follows: —

General Cotton Manufacturing.
Chemistry, Dyeing and Finishing.
Designing.
Carding and Spinning.
Seamless Hosiery Knitting.
Latch Needle Underwear Knitting.

All the above courses are diploma courses, three years long, and are intended to qualify students to hold positions of responsibility in textile manufacturing and allied establishments.

The advantages of these courses to qualify men to hold responsible positions in cotton mills, dyeing and finishing plants, commission houses, etc., are many. These industries, as conducted, are not adapted to give a young man a technical education. The opposite is the case where the primary object is to impart knowledge and to train in the correct method of doing things.

It is not expected that a young man, going from this school, will at once secure an executive position. It is expected, on the contrary, that he will begin in a more humble fashion, that with the knowledge acquired in the school and the experience gained in the mill itself, he will be qualified to hold higher positions, and that his advancement will be much more rapid and his knowledge broader than one who has not had the school instruction and training. That such is the case is shown already by the positions now held by the graduates of the school.

Many of them are occupying positions of trust and responsibility in the textile and allied industries as manu-

Lecture Room

facturers, treasurers, agents, superintendents, assistant superintendents, designers in mills and commission houses, overseers, chemists and dyers, etc. Some have been called to good positions as designers directly from the school, and many who have attended the evening classes have so improved in skill and knowledge that they have advanced in position and earning power.

That the work of the school is recognized by textile manufacturers and those engaged in allied industries is attested by the fact that applications are constant for men of the school — more than can be supplied. One of the largest bleaching establishments in the country has assured us that it is ready to take all the men from the chemistry and dyeing department that we will recommend.

But this school does not agree to make successful men out of lazy, careless and indifferent boys, nor does it care for such boys as students. But for those who wish to learn, who are ready to work, who are willing to bide their time, it does offer an opportunity that will supply them with an honorable vocation, with many opportunities for advancement in the world, with good remuneration.

In case a prospective student feels that no one of the diploma courses meets his particular needs, he is requested to communicate with the president, stating his wishes. Whenever possible, special courses will be given in the various departments, for which certificates will be granted, stating the subjects taken and the time given to them. The limitations of these special courses will be determined in every case by the management.

General Cotton Manufacturing Course.

First Year.

First Term.

Subject.	Hours per Week.
Pickers and Cards (101),	6½
Weaving (111),	6½
Cloth Analysis (121, 151),	3½
Designing (131),	1½
Hand Loom (161),	1½
Principles of Mechanics (171),	1
Mechanical Drawing (172),	4
Chemistry (182),	6½
Yarn Calculations (121),	1½

Second Term.

Subject.	Hours per Week.
Cards and Drawing Frames (102),	5
Weaving (112),	5
Warp Preparation (122),	3½
Designing (132),	1½
Cloth Analysis (152),	3½
Hand Loom (161),	1½
Mechanical Drawing (172),	3
Machine-shop Practice (174),	3
Textile Chemistry and Dyeing (222),	6½

Second Year.

First Term.

Subject.	Hours per Week.
Roving and Spinning Frames (103),	10
Weaving (113),	3½
Designing (133),	2
Cloth Analysis (153),	5
Machine Drawing (173, 175),	1
Machine-shop Practice (174),	3
Steam Engineering (176),	1½
Dyeing (223),	6½

Second Term.

Subject.	Hours per Week.
Doubling and Drafting (104),	6½
Cotton Sampling (107),	1½
Weaving (114),	5½
Designing (134),	2
Cloth Analysis (154),	5
Machine-shop Practice (174),	3
Machine Drawing (175),	1
Steam Engineering (176),	1½
Textile Chemistry (234),	6½

Third Year.

First Term.

Subject.	Hours per Week.
Combers and Mules (105),	10
Weaving (115),	6½
Designing (135),	1½
Color (145),	2
Cloth Analysis (155),	4½
Machine-shop Practice (174),	3
Electrical Engineering (177),	2
Option of Carding and Spinning or Knitting (294),	3

Second Term.

Subject.	Hours per Week.
Carding and Spinning Tests (106),	6½
Weaving (116),	6½
Designing (136),	1
Color (146),	2
Cloth Analysis (156),	3½
Mill Engineering (178),	3½
Cost Finding (179),	3
Converting (235–260),	6½

General Cotton Manufacturing Course.

The course in cotton manufacturing is designed to give the student a thorough fundamental knowledge of the different processes entering into the construction of a piece of cloth from the raw staple to the finished product.

During the first year the student takes up the study of yarn preparation, weaving, designing and cloth analysis. The study of mechanics, mechanical drawing and chemistry is also pursued the first year, the work in these subjects being designed especially for men who are to take up the cotton mill work. Practical work in the machine shop is entered upon the second term. Instruction in yarn calculations, spooling, warping and slashing is also offered during the first year.

In the second and third years sufficient time is given to instruction in picking, carding and spinning, while the subjects of weaving, designing and analysis are continued.

Dyeing is begun the first year, the work being such as is of especial interest to the student of cotton manufacturing. The student is also given instruction in steam engineering during the second year, while in the third year, work in electrical engineering and cotton mill construction is offered. The study of color is taken up during the third year.

The work in all subjects is so arranged that the student is taken gradually from the simpler to the more difficult problems. Much of the work in the last year is original, and the student is thrown on his own resources.

The work in chemistry, dyeing, mechanics and shop practice is all arranged with special reference to the student of cotton manufacturing.

This course is very thorough, and is always recommended to the student who is to make cotton cloth manufacturing his future work.

Designing Course.

First Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Weaving (111),	10	Weaving (112),	8½
Cloth Analysis (121, 151),	13	Warp Preparation (122),	3½
Designing (131),	1½	Designing (132),	1½
Hand Loom (161),	1½	Cloth Analysis (152),	11
Principles of Mechanics (171),	1	Hand Loom (161),	1½
Mechanical Drawing (172),	5½	Mechanical Drawing (172),	3
		Machine-shop Practice (174),	3½

Second Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Weaving (113, 114),	10	Cotton Sampling (107),	2
Designing (133),	2	Weaving (115),	10
Color (145),	2	Designing (134),	2
Cloth Analysis (153, 154),	12½	Color (146),	2
Machine Drawing (173, 175),	1½	Cloth Analysis (155),	10½
Machine-shop Practice (174),	3	Machine-shop Practice (174),	3
Steam Engineering (176),	1½	Machine Drawing (175),	1½
		Steam Engineering (176),	1½

Third Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Weaving (116),	10	Weaving (116),	10
Jacquard Designing (135),	11½	Jacquard Designing (136),	10½
Cloth Analysis (156),	6	Cloth Analysis (156),	3
Machine-shop Practice (174),	3	Commission House Work (157),	3
Electrical Engineering (177),	2	Finishing (235),	3
		Mill Engineering (178),	3

Section A of Exhibition Room

Designing Course.

Designing is a branch of textile manufacturing of sufficient importance to call for a separate diploma course, extending over three school years. Since the major subjects in this course are confined to designing, cloth analysis and weaving, the work is somewhat more intensive than in the general course.

The student, during the first year, takes up the study of the plain loom, the more simple designs and the analysis of such fabrics as contain designs similar to those being studied in the designing lessons.

Instruction the first year is also offered in the preparation of warps for the loom, while work in the mechanical department is entered upon the first year, and extends through all three years of the course.

Instruction in the mechanical department is considered essential to the student of designing, as many of the new fabrics brought out by designers from year to year are based as much upon the mechanism of the loom as upon pure design.

During the second year more advanced fabrics, such as double cloths, bedford cords, piqués and lenos, are studied, both in designing and analysis, while much of the work in the weave room consists of putting original designs into the looms and weaving a short length of each.

Commencing with the first term of the second year, a practical course in color is offered the student, who is required to work out a series of color scales and apply them in coloring designs.

In the second term of this year cotton sampling is introduced.

The third year is largely devoted to the subject of Jacquard designing in both the designing and weaving departments. During this year the subject of commission house work, as it applies to the styling and finishing of new fabrics, is dealt with, and the student is given a close insight into the requirements of this branch of designing.

For the student who wishes to perfect himself in the subject of cloth designing, as applied to the cotton trade, this course will be found very complete.

Chemistry, Dyeing and Finishing Course.

First Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Principles of Mechanics (171),	1	Mechanical Drawing (172),	3
Mechanical Drawing (172),	4	Machine-shop Practice (174),	3
General Chemistry (181),	13	Qualitative Analysis (192),	3
Inorganic Preparations (183),	7	Quantitative Analysis (202),	10
Qualitative Analysis (191),	6	Organic Chemistry (212),	7
Yarn Calculations (121),	1½	Textile Chemistry and Dyeing (222),	6½

Second Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Color (145),	2	Color (146),	2
Machine Drawing (173, 175),	1½	Machine-shop Practice (174),	3
Machine-shop Practice (174),	3	Machine Drawing (175),	1½
Steam Engineering (176),	1½	Steam Engineering (176),	1½
Quantitative Analysis (202),	9	Dyeing (224),	13
Organic Chemistry (213),	6	Textile Chemistry (234),	11½
Dyeing (223),	6		
Textile Chemistry (233),	3½		

Third Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Machine Shop (174),	3	Machine Drawing (175),	2
Electrical Engineering (177),	2	Drying (250),	6
Dyeing (225),	10½	Calendering (255),	9
Singeing (240),	3	Putting up (260),	3½
Scouring (241),	6	Thesis (269),	12
Bleaching (242),	4		
Mercerizing (245),	4		

Chemistry, Dyeing and Finishing Course.

The object of this course is to give to the student a thorough knowledge of the chemistry of the textile processes involved in the manufacture of cotton cloth. To insure a perfect foundation, the first two years are devoted almost entirely to chemical subjects and laboratory work. During this period the subjects of general chemistry, inorganic and organic, are taught, the preparation and properties of various chemicals and dyestuffs, the properties of the various fibers, and the coloring of them.

The third year is devoted almost entirely to the practical dyeing and finishing of cotton goods. The best current practice is followed, but the underlying principles are thoroughly taught in order that the student may understand the limitations and purpose of each process.

The subjects of machine drawing, principles of mechanics, electricity and shop work are taught. These allied subjects are arranged with special reference to the major subjects, and are considered very important, as they give the student a first-hand knowledge of the construction of the various machines.

The graduates of this course find employment with dyestuff makers and dealers, with manufacturers of chemicals used in dyeing, with bleacheries, dye houses and finishing works.

It is desirable that students entering this course shall have successfully completed a scientific course in high school or its equivalent. Any one, however, who can show by examination his ability to profit by the instruction given is admitted.

Seamless Hosiery Knitting Course.

First Year.

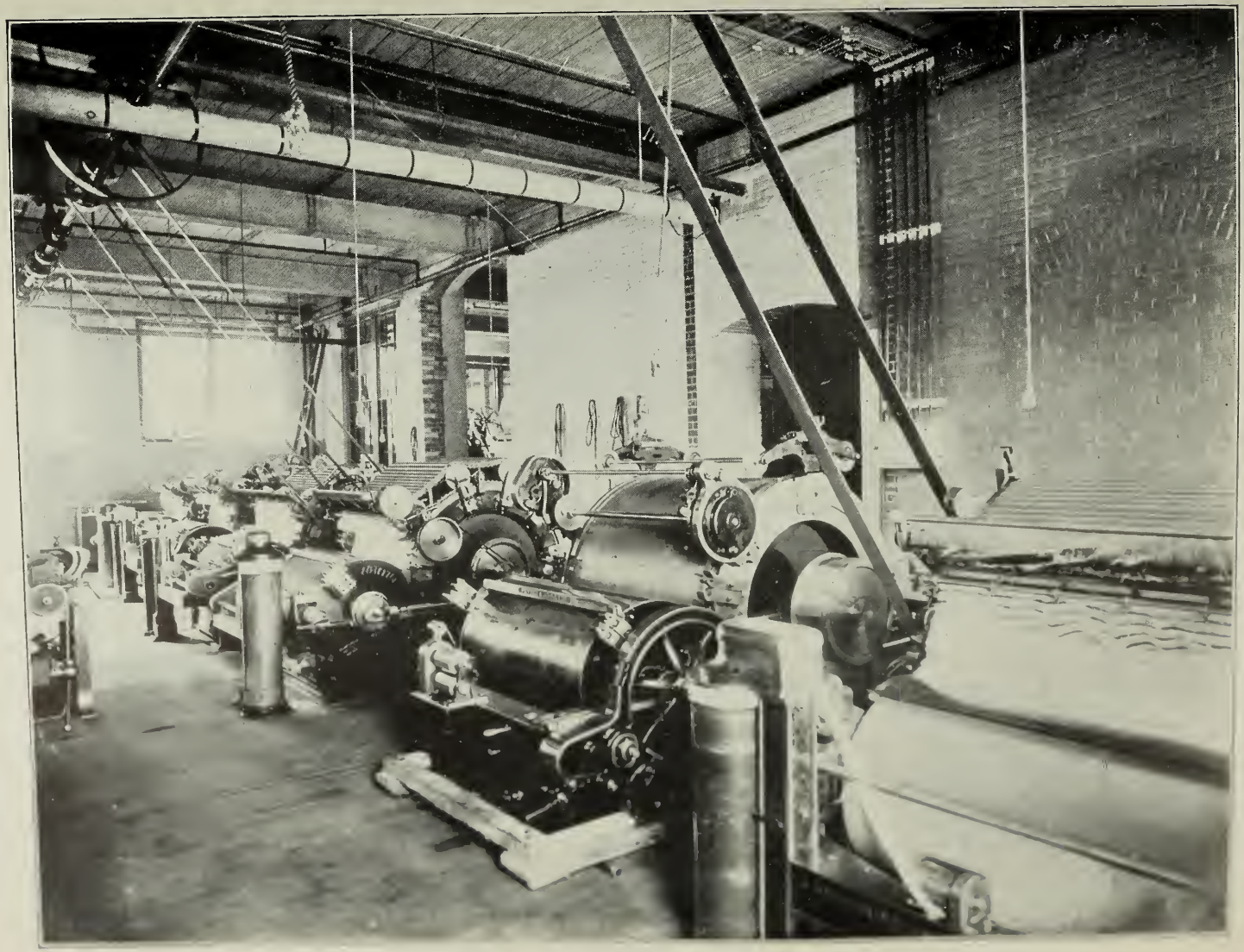
First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Pickers and Cards (101),	6½	Cards and Draw Frames (102),	5
Principles of Mechanics (171),	1	Mechanical Drawing (172),	3
Mechanical Drawing (172),	4	Machine-shop Practice (174),	3
Chemistry (182),	6½	Textile Chemistry and Dyeing (222),	6½
Knitting (271),	13	Knitting (271),	15
Yarn Calculations (121),	1½		

Second Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Roving and Spinning Frames (103),	6½	Doubling and Drafting (104),	6½
Machine Drawing (173, 175),	1½	Cotton Sampling (107),	1½
Machine-shop Practice (174),	3	Machine-shop Practice (174),	3
Steam Engineering (176),	1½	Machine Drawing (175),	1½
Dyeing (223),	6	Steam Engineering (176),	1½
Knitting (272),	14	Textile Chemistry (234),	6
		Knitting (273),	12½

Third Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Combers and Mules (105),	6½	Carding and Spinning Tests (106),	6½
Machine-shop Practice (174),	3	Machine Drawing (175),	2
Electrical Engineering (177),	2	Mill Engineering (178),	3
Dyeing (226),	3	Dyeing (226),	3
Knitting (274, 293),	18	Knitting (274, 293),	18



Carding and Spinning Department, showing Cards

Seamless Hosiery Knitting Course.

The course in seamless hosiery knitting is adapted to the needs of those students desiring a thorough knowledge of the hosiery industry.

The instruction given covers both the technical and practical parts of the business, including cost finding.

A large part of the time is devoted to instruction work on the knitting machines.

During the first year the student takes up the winding and preparation of cotton, lisle, wool, worsted and silk yarns for use on hosiery machines; also the principle of circular latch-needle knitting, and the setting and adjusting of different makes of rib-leg and rib-top machines.

In the second and third years the time is given up to a study of the different makes of automatic hosiery machines, knitting men's half hose, ladies' hose, footing children's and infants' hose, looping, welting and mending; method of handling and keeping track of goods through the mill; cost of manufacturing from yarn to the box.

Instruction is also given in cotton yarn preparation, yarn calculations, cotton sampling, mechanics, steam engineering, chemistry and dyeing, the work in these different subjects being arranged to meet the special needs of the student.

This course is recommended to those students who intend to become connected with a hosiery mill.

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Latch Needle Underwear Knitting Course.

First Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Pickers and Cards (101),	6½	Cards and Draw Frames (102),	5
Principles of Mechanics (171),	1	Mechanical Drawing (172),	3
Mechanical Drawing (172),	4	Machine-shop Practice (174),	3
Chemistry (182),	6½	Textile Chemistry and Dyeing (222),	6½
Knitting (281),	13	Knitting (281),	15
Yarn Calculations (121),	1½		

Second Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Roving and Spinning Frames (103),	6½	Doubling and Drafting (104),	6½
Machine Drawing (173, 175),	1½	Cotton Sampling (107),	1½
Machine-shop Practice (174),	3	Machine-shop Practice (174),	3
Steam Engineering (176),	1½	Machine Drawing (175),	1½
Dyeing (223),	6	Steam Engineering (176),	1½
Knitting (282),	14	Textile Chemistry (234),	6
		Knitting (283),	12½

Third Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Combers and Mules (105),	6½	Carding and Spinning Tests (106),	6½
Machine-shop Practice (174),	3	Machine Drawing (175),	2
Electrical Engineering (177),	2	Mill Engineering (178),	3
Dyeing (226),	3	Dyeing (226),	3
Knitting (284, 293),	18	Knitting (284, 293),	18

Latch Needle Underwear Knitting Course.

The course in latch needle underwear knitting is adapted to those students intending to become connected with this branch of the textile industry.

As in the case of the hosiery course, the larger part of the student's time is devoted to instruction work on the knitting machines. Instruction is also given in cotton yarn preparation, yarn calculations, mechanics, steam engineering, cotton sampling, chemistry and dyeing. As is the case with all other courses offered, instruction in these correlated subjects is arranged best to meet the needs of each individual course.

Both of the knitting courses are very thorough, and give the student a good working knowledge of the different processes and the machinery connected with the same. The knitting department of the New Bedford Textile School contains a larger variety of knitting machinery than is found in any similar school in the United States, and the courses offered in this department cannot fail to be of very great benefit to any one desiring knowledge along these lines.

Carding and Spinning Course.

First Year.

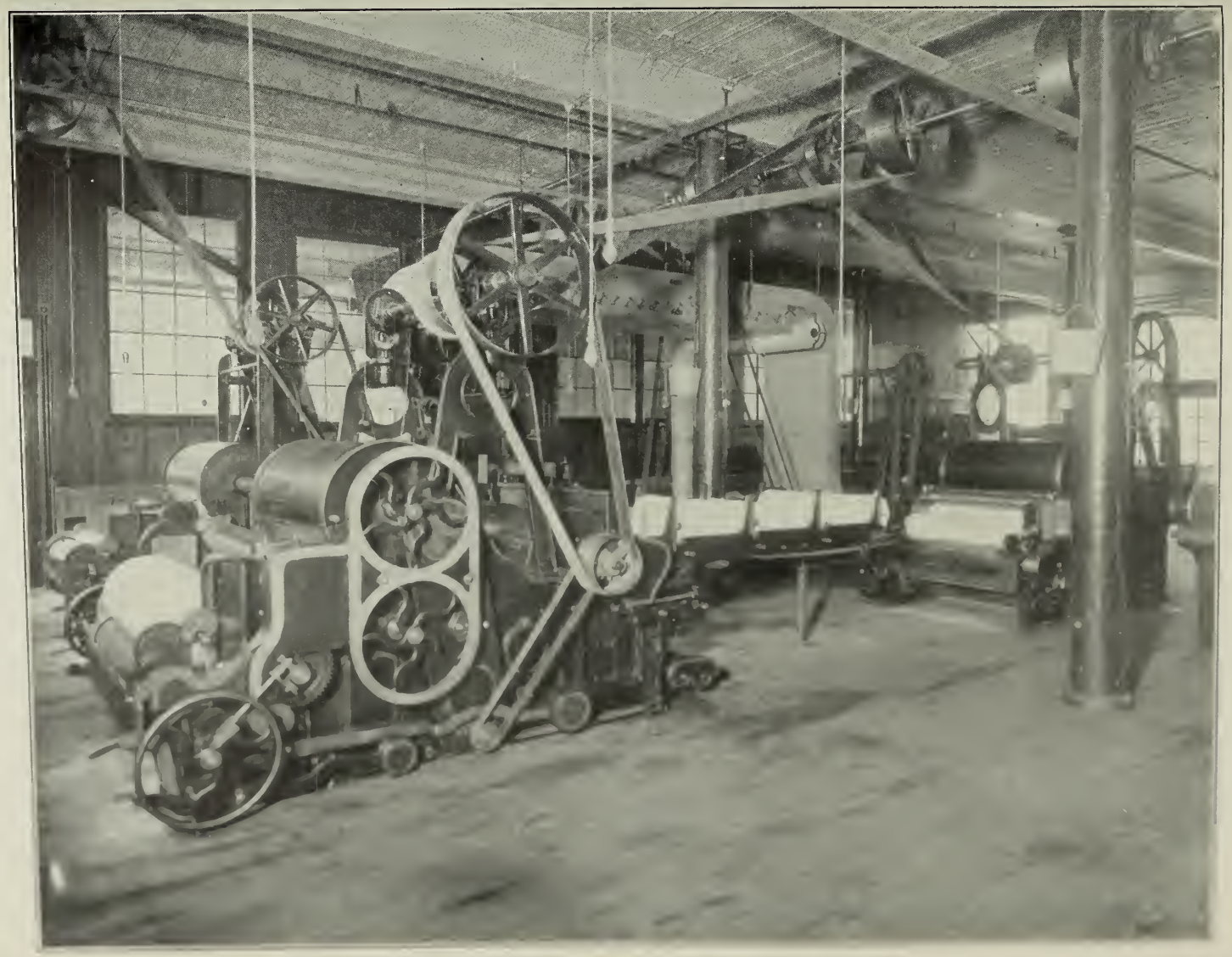
First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Picking, Carding, Roving (300),	14	Drawing, Spinning, Doubling and Drafting (302),	13½
Mechanical Drawing (172),	4	Machine Shop (174),	3
Chemistry (182),	6½	Mechanical Drawing (172),	3
Knitting (301),	6½	Chemistry and Dyeing (222),	6½
Yarn Calculations (121),	1½	Knitting (301),	6½

Second Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
Combers and Mule Spinning (303),	14	Twisting and Cotton Classing (304),	14
Knitting (301),	6½	Knitting (301),	6½
Steam Engineering (176),	1½	Steam Engineering (176),	1½
Machine Drawing (173–175),	1	Machine Drawing (175),	1
Dyeing (223),	6½	Textile Chemistry (234),	6½
Machine Shop (174),	3	Machine Shop (174),	3

Third Year.

First Term. Subject.	Hours per Week.	*Second Term.* Subject.	Hours per Week.
General Test Work and Roll Covering (305),	21	Yarn Testing and Comber Reneedling (306),	19
Knitting (301),	6½	Knitting (301),	6½
Electrical Engineering (177),	2	Mill Engineering (178),	2
Machine Shop (174),	3	Machine Drawing (175),	2
		Cost Finding (179),	3



Carding and Spinning Department, showing Picker Room

Carding and Spinning Course.

The course in carding and spinning is designed to give the student a thorough knowledge of cotton yarn manufacture.

The larger part of the student's time is devoted to instruction on the different machines used in the preparation of cotton yarn.

Instruction is also given in knitting, mechanics, steam engineering, chemistry and dyeing. Considerable time is given to knitting, as that industry is closely related to cotton yarn manufacture.

This course is recommended to those students who intend to become connected with cotton yarn mills or to become cotton yarn salesmen.

REFERENCES FROM TABULATED COURSES.

101. Pickers and Cards.

Cotton yarn mill machinery. Lists of processes in cotton mills for different numbers of yarn. Proper sequence of processes.

Objects of blending cotton. Methods of mixing same. Bale breakers.

Picker rooms. Automatic feeders. Construction of different varieties of feeders. Their capacity and suitability for the purpose intended.

The cotton opener, its use and object. Various styles of openers. Setting and adjustment of openers. Connection of feeders to openers. The various styles of trunks. Calculations in connection with openers. Breakers. Intermediate and finisher lappers. Different styles and makes of machines. Use and object of the lapper. Construction of aprons, beaters, bars, screens, fans, lap heads, evener and measuring motions, etc. The setting and adjustment of lappers. Calculations in connection with lappers.

The revolving flat card. Its principal parts described, including feed, licker, cylinder, doffer, coiler, screens and flats. Different setting arrangements. Speeds of different parts. Top flat cards, roller and clearer, and other cotton cards. Clothing, grinding, setting and stripping cards.

102. Cards and Drawing Frames.

Study of the card continued.

The railway head as used either independently or combined with sections of cards. Single and double railway heads. Eveners, draft calculations, metallic and other rolls.

Method of arranging and constructing drawing frames. The use and objects of the frame. Gearing, weighting, stop-motions, varieties of rolls, etc.

103. Roving Frames, Spinning Frames and Twisters.

Slubbers. First and second intermediates. Roving or jack frames. The construction and use of the fly frame. Description and use of the different parts. Calculations in connection therewith. Changing and fixing frames, etc.

The spinning frame. Its construction and use. Its principal parts, such as creels, rolls, rings, travelers, speeds, builder motions, etc.

The objects of twisting. Wet and dry twisting. The direction and amount of twist in different ply and cord threads; different methods used in preparing yarn for twisting. Size of rings and travelers for different counts of yarn. Methods of winding, speeds and production.

104. Doubling and Drafting.

Figuring the number of doublings and drafts from picker to spinning frame or mule.

Calculations for schedules of machinery required for different counts and amounts. Cost and production of yarn.

Practice work consists of carrying work through picker to spinning frames.

105. Combers and Mules.

The sliver and ribbon lap machines. Construction of American and English machines. Methods of operating same. Setting and adjusting same, and calculations in connection therewith.

The cotton comber. The construction of the comber, its use and objects. Comber setting. Comber calculations. Operation and management of combers.

The spinning mule and its uses. The special features of the mule. Description of the head stock, the cam shaft, mule carriage and other parts. The construction and use of each part of the mule. Different movements in the mule and the timing of the same. The copping rail and the building of a cop. Faults in mule spinning and their correction.

106. Tests.

Original work in laying out processes for different counts of yarn, and carrying the same through from raw cotton to finished yarn. Tests for different processes.

107. Raw Cotton.

Raw cotton. Its varieties. The cultivation of cotton. The preparation of cotton for the market. Cotton ginning. Cotton as an article of commerce. The selection of cotton, its suitability for different purposes.

111. Plain Looms.

The construction of the plain loom. The principal movements in weaving. Methods of shedding. Shedding motions. Shedding by cams. Auxiliary shafts. Varieties of cams. Construction of cams. Timing cams and effect on the cloth.

Picking motions. Different methods of picking. Shuttles. Shuttle boxes. Shuttle guards. Protector motions. Reeds. Let-off motions. Take-up motions. Calculations in connection with take-up motions.

Filling-stop motions.

Temples. The various makes and their uses.

The Draper loom. Special features of its construction.

Automatic shuttle and bobbin changing looms.

Special features of various makes of looms, including Crompton & Knowles, Kilburn & Lincoln, Whitin, Mason and Stafford looms.

The management, operation and fixing of looms. Putting in warps. Faults and remedies in weaving and fixing. Calculations directly connected with plain looms.

Looms adapted to weave twills and satins.

Electrical and mechanical warp stop-motions.

112. Fancies.

Looms adapted to weave fancy cloth with dobbies. Dobbies with single and double cylinders. Chain pegging for dobbies.

Tying in and starting up warps for which the student has worked out some design.

113. Box Looms.

Looms for the use of various colors of filling. Drop box motions. Box chain multipliers. Multiplier motions. Still box motion.

114, 115. Special Loom Attachments.

Dobby looms combined with other motions for special purposes, such as looms adapted to weave lenos, checks, blankets, handkerchiefs, towels and other goods.

116. Jacquards.

The principle of construction of Jacquards. Single and double lift Jacquards. Jacquard machines with one and two cylinders. Harness lines. Lingoes. Comber boards. Tying up Jacquards. Cross border and other Jacquard machines.

121. Yarn Calculations.

Definitions. Calculations for finding length, weight or counts of single yarns, whether cotton, woolen, worsted, silk, etc. Ply yarns.

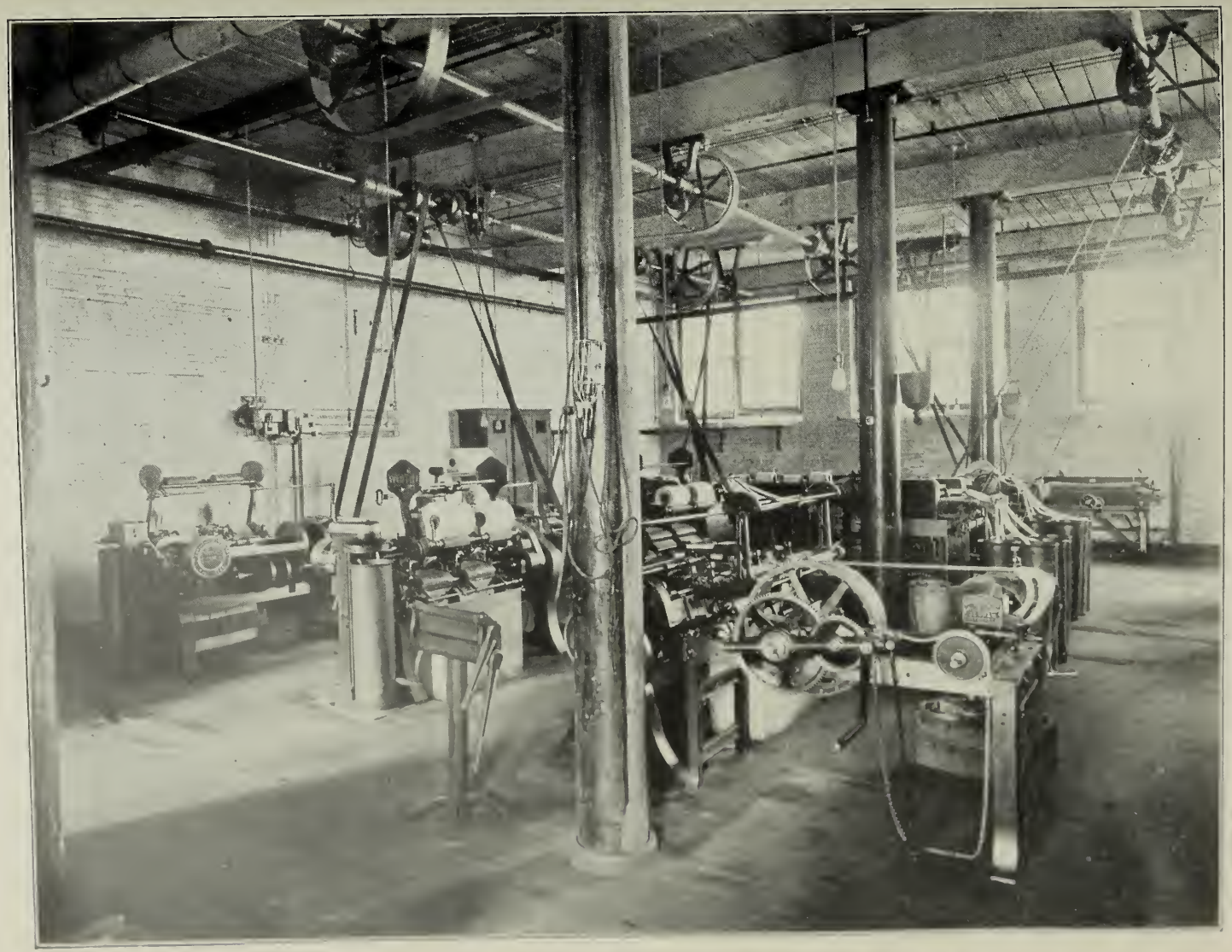
122. Spoolers, Warpers and Slashers.

Various methods of preparing cotton warps.

The spooler, its use and construction. Production per spindle. Spindle speeds. Builder motions. Thread guides. Different makes of spoolers.

The operation and setting of the spooler.

Warpers. The object of the warper. Its construction and operations. Speeds, settings, etc. Warpers with and without cone drive. Warper slow motions. Faults in warping and their correction.



Carding and Spinning Department, showing Railway Heads and Combers

The slasher. Its use. Construction of the different parts of the slasher.

Sizing or dressing yarns. Materials used. Methods of mixing same. Suitable materials for various purposes.

Preparing the warp for the loom. The construction of reeds and harnesses.

Variations from the above system for special purposes, such as used in gingham and other mills.

131. Designing.

Definitions of the words and terms used in designing and analysis. Characteristics of the various classes of fabrics. Design paper and its application to designing and analysis. Cloth structure, with a study of the various sources from which the patterns of fabrics are obtained. Twills. Wave effects. Diamonds. Sateens. Granites. Checkerboards. Rearranged twills. Figured twills.

132. Designing.

Designs for single fabrics continued, such as honeycombs. Mock and imitation lenos. Entwining twills. Spot weaves arranged in various orders. Cord weaves. Imitation welts. Elongated twills. Check effects. Corkscrew weaves. Four change system of designing. Damask weaves.

133. Designing.

Designing for more complicated fabrics, such as figuring fabrics, using extra material. Fabrics backed with extra material. Fabrics having the face and back of different material or pattern. Double plain fabrics. Reversible fabrics. Embossed effects, such as Bedford cords, piqués, marseilles weaves.

134. Designing.

Designing for leno, pile and lappet fabrics, such as methods of obtaining leno patterns. Mechanical appliances for the production of lenos, yoke and jumper motions. Bottom doups. Top doups. Check lenos. Jacquard leno effects. Weaving with wire doups. Weaving with the bead motion. Russian cords. Full turn lenos.

Pile fabrics, such as velveteens, corduroys, velvets, plushes, carpets, terry toweling.

Lappet weaves. Description of the various lappet motions. Designing for original lappet effects. Reproduction of woven lappet patterns. Chain drafts. Locking motions. Spot effects.

135. Jacquard Designing.

Design paper. How to figure the design paper necessary to reproduce any Jacquard pattern. Defects of Jacquard patterns and how to avoid them. Transferring designs to plain paper. Transferring sketches to design paper. Changing the sley of Jacquard fabrics. Method of casting out. Ground weaves. Rules for finding sley, pick, warp and filling. Foundations upon which Jacquard patterns are based.

136. Jacquard Designing.

Different methods of making designs. Sketching original designs by the different methods commonly used. Working out the sketches upon design paper. Cutting cards on the piano card-cutting machine. Card lacing. Weaving of at least one original design. Method of weaving Jacquard leno designs. Mechanisms required in weaving Jacquard lenos. Making Jacquard leno designs.

Harness tying. Various systems of tying Jacquard harnesses. Lay-over ties. Center ties. Compound ties.

145. Color.

Theory of colors. Complementary colors. Hue, value and chroma scales. Practical work in color scales.

146. Color.

Munsell system of coloring. Color harmony, color effects. Analyzing color effects. Practical work in making sequences and in producing colored designs.

151. Analysis.

Standard methods of representing harness and reed drafts. Harness drafts on design paper. Written harness drafts. Chain drafts. Lay-out plans. Finding weight of warp yarns, weight of filling yarns. Yards per pound of cloth.

152. Analysis.

Finding counts of warp and filling by various methods. Finding yards per pound of cloth from a small sample by weighing. Making original designs and weaving them on the power loom. Reproduction of woven samples.

153. Analysis.

Analyzing more difficult samples. Finding average counts. Percentage of each material. Production of loom. Price per yard for weaving. Weaving of more difficult original designs.

154. Analysis.

Analysis of leno fabrics, making both written drafts and harness drafts on design paper. Chain drafts. Weaving of original leno designs. Changing the construction of fabrics and preserving balance of structure.

155. Analysis.

Analysis of more difficult samples continued. Weaving of original samples. Work on changing over samples to different constructions.

156. Analysis.

Continuation of the work outlined in 155. Weaving of students' original Jacquard designs. Work on cost of manufacturing fabrics.

157. Commission House Work.

Study of fabrics known as standard goods, such as prints, percales, satins, lawns, organdies, chambrays, voiles, etc.

Figuring to obtain material for the reproduction of cloths of standard construction.

Methods of ascertaining counts of warp and filling; also sley and pick for new fabrics.

Determining the manufacturing cost of fabrics.

161. Hand Loom.

The hand loom, its construction and use. Harness drafts as affecting the weave. Building harness chains. Practice on the hand loom in weaving fabrics from original and other designs, and putting into practice the designing lessons.

171. Mechanics.

The fundamental principles of mechanics and physics, with special reference to practical uses in textile machinery and to future application in the engineering courses, are given in a series of lectures. Practical problems illustrating these principles are worked out in the classroom. A study is also made of the strength and nature of the different materials used in machine construction.

Textbook: "Practical Mechanics," Hale.

172. Mechanical Drawing.

The object of this course in mechanical drawing is to give the student a good foundation for reading drawings and for making such sketches and drawings as he will be likely to be called on to make in practice. Thoroughness, accuracy and neatness are insisted upon throughout the course. The work in mechanical drawing begins with instruction in the use and care of drawing instruments. The following is a general outline of the work to be covered: plain lettering, geometrical constructions, orthographic and isometric projection, inking and tracing, standards, conventions and tabulation as used in the modern drafting room. Simple working drawings are to be made to scale, and the final work of the year consists of free-hand sketching of machine details from parts of textile machinery. This brings into use at one time all the work covered during the year, and serves as a test of the student's grasp of the subject. Textbook: —

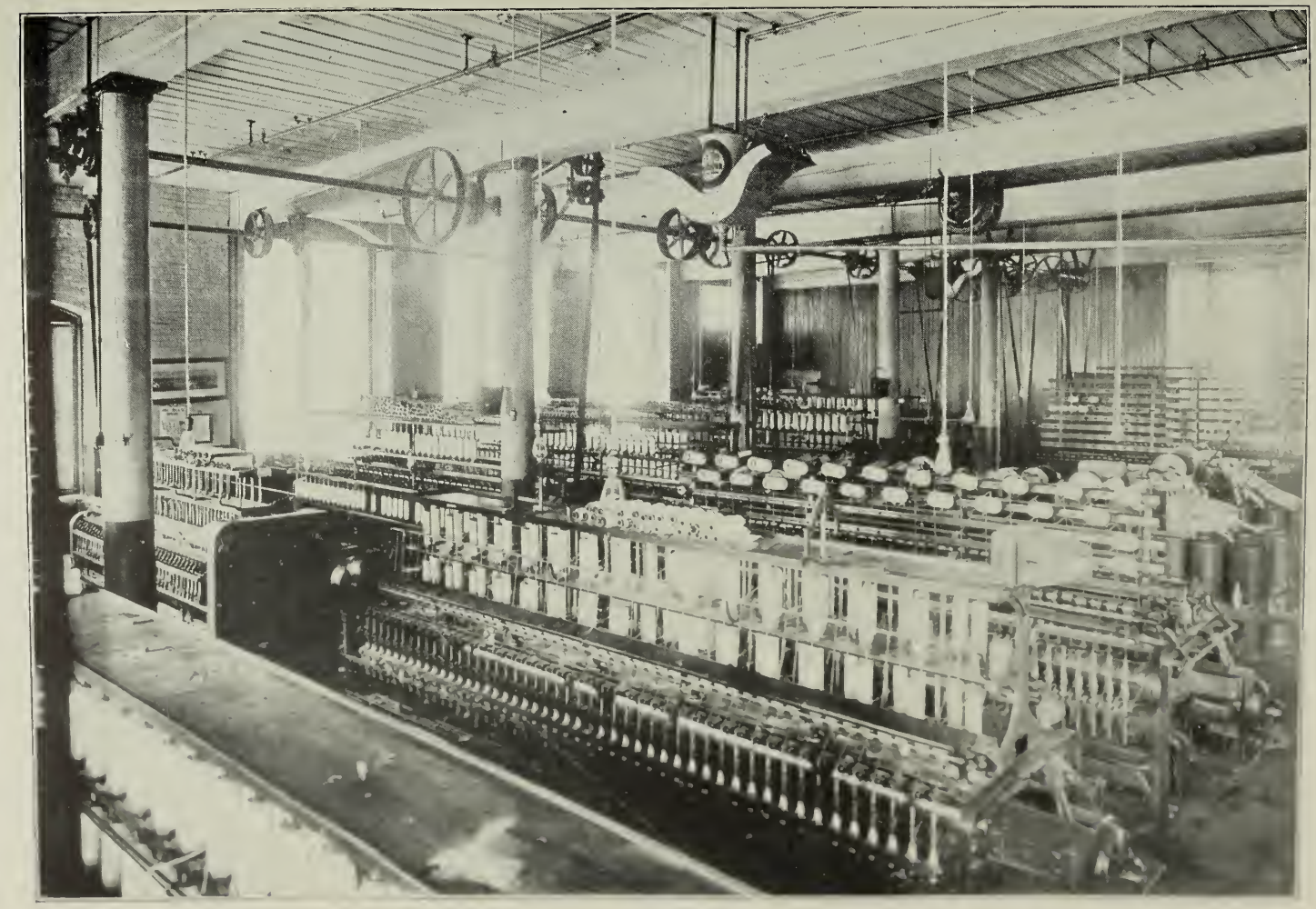
173. Mechanism.

In view of the large number of mechanisms used in textile machinery this course is a very important one. The subject is given by means of lectures and recitations, the work in the drawing room being closely related to the classroom instruction. This course includes studies and graphical solutions of cams, gears, etc.

174. Machine Shop.

Shopwork and drawing are organized as one department for the purpose of securing close correlation of the work. Many exercises are common to the drawing room and the shop. In the machine shop an effort is made, not only to train the student manually, but also to teach him correct shop methods and practice. Carefully graded exercises are arranged to teach him the use of measuring instruments, hand tools and then machine tools. The different measuring tools and devices, with advantages, methods of use and limits of accuracy of each, are considered. Each cutting tool is taken up, its cutting angles and general adjustments are described, together with the "feeds" and cutting speeds suitable for each material worked and for each machine. The course includes instruction in centering, squaring, straight and taper turning and fitting, outside and inside screw cutting, chucking, reaming, finishing and polishing, drilling, tapping, grinding, boring, planing flat and V surfaces, filing and gear cutting, including spur, bevel, rack and worm gears.

When the student becomes proficient in handling the tools and machines, he is given work in fitting and assembling, and also repair work from the other departments.



Carding and Spinning Department, showing Roving and Spinning Frames

175. Machine Drawing.

Machine drawing is a continuation of the mechanical drawing of the first year, and the work is dependent upon a thorough knowledge of how to apply the conventions of drawing which custom has made standard as given during the first year. The work consists of proportioning of machine details as fixed by practice, making assembly drawing from detailed sketches, and also detailing parts from assembled machines.

176. Steam Engineering.

A typical power plant, including the boiler, steam engine and all necessary auxiliary apparatus such as is found in a modern cotton mill, is studied in detail. Prepared outlines are discussed in lecture periods, and the details supplied by the student after reading assignments in standard text and reference books. Practice is given in handling engines, apparatus and equipment in the laboratory. Exercises consist in adjusting, starting and running engines, taking and working out indicator cards, prony brake tests, pump and injector tests, etc.

177. Electrical Engineering.

The elementary principles of magnetism and electricity are taken up in lecture and recitation, and are supplemented by laboratory exercises. Emphasis is placed on the different wiring systems and electric drives as used in mills and factories. A general study is made of a typical electrical power plant, and of the apparatus required to generate and distribute electrical energy.

Textbook: "Essentials of Electricity," W. H. Timbie.

178. Mill Engineering.

Proficiency in this course depends on the thoroughness with which the work of the previous courses was carried on. The course consists of lectures supplemented by work in the drafting room. Problems in design, construction and equipment of mills and factories are taken up. The subject includes foundations, walls, floors, roofs and mill construction in general. The choice of location and the methods of transmitting power are discussed. The following outline shows the scope of the course: principles underlying the design and construction of framed structures, involving the use of wood, steel, brick, stone, concrete and reinforced concrete, methods of lighting, ventilating and protecting from fire.

179. Figuring Costs.

Three hours a week, during the last term of the general course, is devoted to methods of cost finding in a cotton mill. A complete mill is taken for an illustration, and the reports of both the expense and production are used to work with.

181. General Chemistry.

This course comprises two lectures of forty-five minutes each and ten and one-quarter hours of laboratory work each week. The laboratory work is closely criticized by the instructor, and individual effort encouraged. Careful manipulation, thoroughness in observation, accuracy in arriving at conclusions and neatness are required of each student. The fundamental principles of the science are taught in connection with the descriptive chemistry of the elements.

No previous study of chemistry is required for admission to this course, but the instruction is so arranged that students having already spent considerable time in chemistry in other schools are given advanced work in which the knowledge already acquired is utilized.

182. General Chemistry.

The training afforded by a course in general chemistry is considered of value to all the students of the school, and also lays the foundation for the subsequent course in dyeing. Hence students taking courses in the cotton or knitting departments are required to take general chemistry during the first term of the first year. This subject covers the same ground as subject 181, but in a briefer manner. Five hours per week are spent in the laboratory, and one hour in the lecture and recitation room. A few of the simpler organic compounds are also studied.

Textbook: Morgan and Lyman's "Chemistry."

183. Inorganic Preparations.

The time in this subject is devoted largely to laboratory work, with an occasional explanatory lecture. First the student is taught the best methods of carrying on the usual laboratory operations, as forming of crystals, precipitates, filtering, evaporating and drying. This is followed by the preparation of several salts and industrial products, substances being selected that are of particular interest to the textile industry. The work is progressive in subject-matter, and so arranged as to be co-ordinate with the subject of general chemistry.

191-192. Qualitative Analysis.

This course comprises one lecture and one recitation period of three-quarters of an hour each and seven and one-quarter hours' laboratory work a week during the first term of the first year. The student is taught the principle of systematic qualitative analysis and the application of the principles to detect the base-forming elements, the acid-forming elements, and the various classes of compounds of the bases and the acids. Especial attention is paid to the inorganic materials ordinarily met with in the manufacture, dyeing and finishing of cotton piece goods. The student is required to analyze correctly a sufficient number of unknown substances to demonstrate his ability to detect any of the elements ordinarily met with.

Textbook: Noyes' "Qualitative Analysis."

202. Quantitative Analysis.

This course comprises one lecture a week, the remainder of the time being devoted to laboratory practice. The first part of the term is spent in simple gravimetric determination of chlorine, sulphuric, carbonic and phosphoric acids, and iron, aluminum, calcium and magnesium. The last part of the term is devoted to volumetric determinations involving the use of acids, alkalis, oxidizing and reducing agents, and chlorimetry. Great stress is laid on the *accuracy* and *integrity* necessary for quantitative work. Each student is required, under supervision of the instructor, to adjust his own balances and calibrate all burettes, flasks and pipettes he uses, that he may understand the nature and amount of error in his work, thus giving him confidence in his results. In connection with this course a thorough training in the solution of chemical problems is given. The use of reference books is encouraged, and each student is trained to consider each original analysis from the various points of view possible.

Textbook: Talbot's "Quantitative Analysis."

212. Organic Chemistry.

This course is divided into two terms, the first term giving a general survey of the subject, a thorough training being given in the reactions and properties of the various compounds met with in textile industries. The two lower members of the paraffines and their derivatives are exhaustively treated. Then the study of the higher members is taken up, the unsaturated hydro-carbons and their derivatives, especial attention being given to the members met with in the artificial dyestuffs.

Textbook: Moore's "Organic Chemistry."

213. Organic Chemistry.

The work of the second term is devoted exclusively to the study of dyestuffs and their preparation. The constitutions of various typical dyestuffs are studied to determine their influence on coloring power, dyeing properties and fastness to light, acids, alkalis, bleaching, etc. In the limited time afforded, the number of dyestuffs studied is necessarily limited, but the training is made so thorough that the student is enabled to take up further investigation intelligently should his future work demand it.

222. Textile Chemistry and Dyeing.

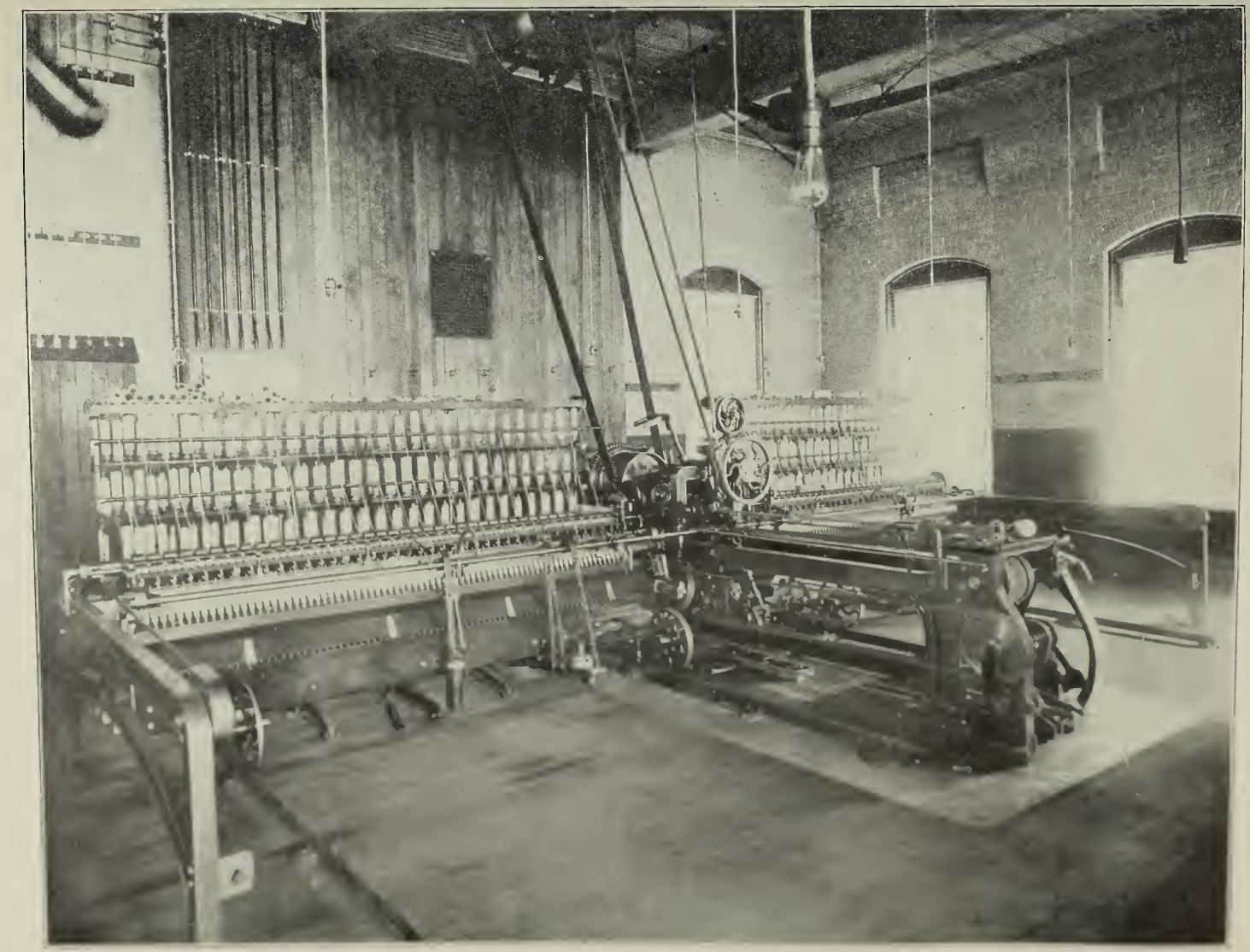
These subjects open with a study of the chemical and physical technology of the fibers. Lectures are given descriptive of the action of heat, moisture, acids, alkalis, oxidizing agents, reducing agents, salts, organic ferments and coloring matter upon the fibers. Parallel with these lectures laboratory experiments are carried out by the performance of which the student becomes familiar with the chemical and physical properties of the various fibers and the actions of the several agents upon them.

This is followed by a series of lectures and experiments that illustrate the application of the above principles to practice. The student is taught how to scour cotton, wool and silk; how to bleach these fibers by the use of sulphur dioxide, chlorine compounds and oxygen compounds. The mercerizing, fireproofing and waterproofing of cotton, the chlorination of wool, and the waterproofing of silk are also demonstrated.

Now the application of the dyestuffs to the various fibers is studied. For convenience the dyestuffs, whether of natural or synthetic origin, are classed as either substantive, acid, basic or mordant. The best method of application of each of the above groups is then taught. The dyed fibers are tested for their fastness to light, water, acid, alkalis, milling, stoving, chloring, crocking and hot finishing. Modified methods are then considered for the production of especial degrees of fastness to certain agents by after-treating of the dyed fibers.

223. Dyeing.

This course is supplementary to the course in textile chemistry and dyeing, and consists principally of the study of the various methods of applying dyestuffs the properties of which so differ that a modified method of application is required. Under this head are treated the developed, sulphur, vat, acid afterchromed, chromotrope, eosine, alkali blue, rhodamine, janus, polyhuic mordant, and pigment dyes. Further, the properties of the dyed fibers and the value of each dyestuff for a specific purpose are studied.



Carding and Spinning Department, showing Mule

At the end of the course the general principles of cotton matching are taken up, and experimental work is carried on demonstrating the proper method of obtaining a given shade by mixing several dyes. Obtaining the value of a dye is taught, and the detection of adulterants. Finally, methods for determining the dye, either in the form of a dyestuff or on the dyed fabric, are considered.

The lectures during this term are mainly descriptive of the converting of gray cotton piece goods into the finished state. Machinery used in connection with the processes of singeing, bleaching, scouring, mercerizing, drying, mangling, dyeing, starching, tentering and calendering is explained. The effect of each machine upon the properties of the fabric is studied. Some time is devoted to the consideration of the use of starches, filling agents, soap and oil, and the filling, softening and stiffening action they produce. The student is required to take notes during these lectures, and from such notes write for his own reference a complete text on the subject. In this connection he is encouraged to consult various standard works to amplify his knowledge of textiles.

Samples acquired in connection with the laboratory practice are mounted and bound with the above notes, which they serve to illustrate.

224. Dyeing.

The laboratory work of this term is mainly devoted to the printing of textile fabrics, especial emphasis being laid on cotton. The theory and practice of the various styles, such as the pigment style, the direct printing style, the steam style or metallic or tannin mordants, resist and discharge dye styles, the developed azo style, the printing of indigo and similar dyestuffs and aniline black, are studied. The student makes as many different prints as the time will allow. The course is concluded by experiments illustrating the practice of mercerizing cotton fabrics and a study of the various functions of the various stiffening and softening agents used to produce the different finishes required by the trade. The lecture course during this term covers practically the same ground as the laboratory work, especial emphasis being laid on the mercerizing and finishing of cotton yarns and cloth. During the entire course the student accumulates several thousand samples which he is required to mount in a specially designed sample book for his reference in the future. Special stress is laid on quality rather than quantity of work done. As often as time permits and circumstances demand it, lots of yarn, hosiery, etc., of commercial size are dyed by the students for other departments.

225. Dyeing.

Construction and operation of jiggers. Speed of operation. Penetration of solutions used. Selection of dyestuff. Preparation of dye liquor. Dyeing, washing and after-treating.

Construction of dye padders. Selection of materials for rolls. Speed of machines. Penetration of materials. Selection of dyestuffs. Washing off. After-treatment.

226. Dyeing of Knit Goods.

The object of this course is to give the student an opportunity to dye commercial size lots of knit goods and hosiery. Lectures describing the various processes are given, and the necessary calculations are taught in connection with this course. Scouring and bleaching are also taught. The student is required to make use of knowledge acquired in the previous courses in dyeing.

233. Textile Chemistry I.

This subject comprises a study of the properties and analysis of water, coal, oil, soap, mordants and other chemicals used in the textile industries. One lecture of forty-five minutes' duration is given each week, and frequent conferences are held with the student in the laboratory. The student is required constantly to consult standard books of reference in connection with his laboratory work. While the limited time devoted to this course does not give enough time for the student to make many complete analyses, it does illustrate to him the application of the knowledge acquired in the previous subjects of qualitative and quantitative analysis and organic chemistry.

234. Textile Chemistry II.

This subject deals with starches, sizing and softening compounds, and textile fabrics. The commercial methods of obtaining the above substances, their usual composition and application, is discussed in lectures. The laboratory work consists of the analysis of typical compounds, obtained from the consumers when possible. The detection of the various starches and fibers by the microscope is taught, and their separation and estimation by chemical methods. Sizing and loading of fabrics is also discussed. This course is very practical in its application, and *accurate* work is required.

235. Finishing of Cotton Fabrics.

The object of this course is to give to the designer a knowledge of the various methods used in finishing, and the effect of the same on the appearance and construction of the fabric. Simple methods of distinguishing between different fibers and finishes, filled and pure starched cloths, are taught. The instruction is given by means of one lecture a week and two hours' laboratory practice.

240. Singeing.

Construction of machine. Function of air pump. Adjustment of gas. Speed of operation. Singeing for a face finish. Singeing for a body finish. Determination of best conditions for a particular cloth.

241. Scouring.

Construction of kiers. Methods of circulation. Packing of goods. Time of boiling. Washing down. Use and operation of washing machines. Choice of scouring agent.

242. Bleaching.

Construction of chemic vats and cisterns. Application of bleaching solution to the goods. Squeezers. Piling down. Precautions to prevent tendering action of bleaching agent. Washing. Use of "Antichlors." Openers and scutchers. Selection of bleaching agent.

245. Mercerizing.

Construction of mercerizing machine. Design of tenter clips. Proper tension in tenter frame. Removal of caustic by washing. Neutralization of last traces. Selecting of mercerizing agent. Variation in conditions to suit cloth treated.

250. Drying.

Preparation of goods for drying. Importance of proper mangling. Construction and operation of a mangle. Construction of the drying cylinders. Mechanical limits of speed of operation. Best speed in view of results obtained on goods. Static electricity and its grounding.

Construction and use of tenter frames. Methods of heating, direct and indirect. Direction of air currents in relation to that of the cloth. Conditions giving the most rapid drying; the best width. Choice of tenter clip for a specific purpose.

255. Calendering.

Types of calenders and various finishes obtained. Construction of a simple calender, friction calender, chasing calender, Schreiner and embossing calenders. Speeds and conditions governing the operation of the above machines. Use of scrimp bars and stretchers. Gas and steam heating. Metallic rolls, fibrous rolls, and finishes produced by them. Care of rolls. Use of water. So-called permanent calender finishes. Use of beetles and hot presses for preparation for calendering. Top finishing.

260. Putting up.

Inspection of goods for faults. Classing as firsts, seconds, thirds and remnants. Yarding by flat folding, by rolling machines. Construction and operation of these machines. Various folds and put-up required by the several trades. Ticketing, banding and papering. Assortment in cases and storage of goods.

269. Thesis.

Each student who is to graduate from the course in chemistry and dyeing must devote twelve hours per week during the last half of his third year to original work, and at least one week before graduation must submit to the principal of the department a thesis of not less than two thousand words based upon the results of his own investigations.

271. Winding and Rip-top Knitting.

Winding and preparation of cotton, lisle, wool, worsted and silk yarns for running on rib-top, rib-leg and hosiery knitting machines.

Construction of circular rib-top knitting machines, principle of circular latch-needle knitting, setting and adjusting of different makes of machines.

Rib-top knitting on 12, 18, 24, 30, 36 and 42 gauge needle machines, with cotton, lisle, wool, worsted and silk yarn.

272. Rib-leg Knitting.

Rib-leg machines, with knee and ankle splicer, chain and chainless measuring devices.

Rib-leg knitting. Different classes of ribs, lace effects, spliced knee and ankle, for children's, boys' and misses' stockings.

Plaiting. Silk yarn on cotton and worsted yarn, also worsted on cotton yarn, for rib tops and rib legs.

273. Hosiery Knitting.

Principle of latch needle seamless hosiery knitting. Constructing, setting and adjusting three-quarter, seven-eighth and full automatic hosiery machines.

Knitting on three-quarter automatic hosiery machines, cotton and wool stockings, fine split sole, hose and half hose.

Seven-eighth automatic hosiery machine, medium and fine gauge hose and half hose.

Warp Preparation Department, showing Warpers and Winders

Knitting men's half hose, ladies' hose; footing children's, boys' and misses' rib legs. White feet and black legs ladies' stockings, double sole, reinforced heel and toe; plaited hose and half hose with white heel and toe, fancy lace effects, on full automatic hosiery machines.

274. Hosiery Finishing.

Hemming and embroidering stockings. Looping, mending and singeing. Boarding, drying and pressing. Inspecting, pairing, stamping, folding and boxing, keeping stock and handling boxed goods.

Method of handling and keeping track of goods through the mill.

Cost of manufacturing different classes of seamless hosiery from yarn to box.

281. Winding and Knitting Cuffs and Sleeves.

Winding and preparation of the different classes of yarns used in the knitting of underwear.

Construction of circular latch needle rib cuff machines, two feed automatic tuck and plain sleevers, with slack course and welt attachments; the principle of plain and tuck stitch knitting.

282. Underwear Knitting.

Knit to shape ladies' underwear on latch-needle circular rib body machines; different principles of this class of knitting. Construction and adjustment of the machines to knit cotton, lisle, worsted and silk yarns; different methods of plaiting on these machines.

283. Underwear Knitting.

Knitting plain 1 & 1 cloth for cut-to-shape union suits and fancy rib cloth for ladies' underwear on plain latch needle body machine.

Latch needle, balbriggan, plain web knitting for plain and fancy stripes, in light-weight underwear.

Rib cuff and shirt borders knitting on circular latch needle rib border and cuff machinery.

Spring needle circular rib knitting. A new principle of knitting extra fine cloth for underwear.

284. Underwear Finishing.

Cutting men's shirts and drawers, ladies' vests, infants' wrappers, children's, boys' and misses' vests and union suits.

Looping, seaming and finishing of underwear in detail.

Fixing and adjusting of the principal styles and makes of sewing machines used in the manufacture of underwear.

Method of handling the goods in process of manufacture from yarn to box.

293. Miscellaneous Knitting.

Knitting fine French balbriggan cloth, worsted and merino cloth, single and double plush cloth, for fleeced-lined underwear, made on spring needle frame.

Sweater knitting, with racked rib and cuffs, pineapple stitch and fancy-colored effects, on circular rib machines.

Full-fashion sweater knitting on the Lamb full-fashion, hand-power machine.

Knitting golf gloves on the Lamb hand-power machine.

Different processes of finishing balbriggan, worsted, merino, and fleeced cloth into underwear ready for market.

294. Knitting (Optional to Third-year General Students).

To those students of the general course who desire some information on knitting machinery, the school offers this option during the last year. The aim of this work is to give to the student an insight into the class of work for which a large part of the yarn in a yarn mill is made.

The different types of knitting machines are studied, and in each case the effect upon the machine and fabric of imperfect yarn is gone into carefully.

300. Picking, Carding and Roving.

Cotton yarn mill machinery. Machines required for making different numbers or counts of yarn.

Picking Room. — Bale breakers or openers, their use and how operated.

Automatic feeders, their construction, methods of setting and adjusting; evener motions, calculations.

Openers, their use and object. The different kinds used and the class of cotton for which they are best adapted. The different kinds of beaters used, and the speeds at which they should run.

Cleaning trunks, their uses and operation.

Breaker, intermediate and finisher lappers. Different style and makes of machines. The construction and operation of the different parts, setting and adjusting the different parts, and arranging the speeds to give the best results. Calculations for speeds, drafts, weights and production on the different machines.

Cards. — The different kinds of cards used; their construction and operation.

The revolving flat card. Its principal parts. Different methods of setting, different settings for different classes of work. The speeds of the different parts, and their effect on the quality of the work produced. Construction of card clothing. Clothing cylinder doffer and top flats. Stripping and grinding cards. Grinding and testing top flats. Covering grinding rolls. Splicing driving ropes and belts.

Calculations for speeds, drafts, production, per cent of waste, etc.

Roving Frames. — The different processes used. The construction and use of the roving or fly frame.

Speeds of the different size frames and the different parts of the frame.

The different styles of differentials used and their object.

Cone drums. The effect of the shape of the cones on the running of the frames. Leveling and adjusting roving frames. Balancing flyers, and the effect of unbalanced flyers on the running of the frame.

The effect of draft and twist on the quality and quantity of the work produced.

Roller setting. Calculations for speeds, draft, twist, tension and lay. Calculations for differentials, cone drums and productions.

301. Special Knitting.

Operations preliminary to knitting. Winding, cone winding, bobbin winding. Development of knitting. Knitting needles. Construction and operation of latch and spring needles. Knitting on circular and flat machines. Study of the results of uneven, mixed and otherwise imperfect yarns in the knitting process, and the effect upon the machine and fabric.

302. Drawing Rolls and Drawing Frames. Ring Spinning. Doubling and Drafting.

Drawing Rolls. — The different kinds of rolls used, their construction, methods of covering, setting and adjusting for different kinds of work. Clearers for drawing rolls.

Drawing Frames. — The railway head and evener draw frame. The construction and arrangement of drawing frames. Different methods of gearing, weighting and stop-motions for draw frames. Calculations for speeds, drafts, dividing drafts, production, etc.

The Ring Spinning Frame. — Its construction and use. The construction and adjustment of the different parts, such as spindles, rings, travelers, rollers, builder motions, etc. Making bands. Comparing different drives for spindles. Twist in yarn, its effect on strength and production. Calculations for speeds, drafts, twist and production.

Doubling and Drafting. — Laying out drafts and weights at the different machines from picker to spinning frame for making different numbers of yarn.

Calculating the number of machines required at the different processes to produce a required amount of yarn of different numbers.

Calculating the labor cost of making roving or yarn, using different methods.

Calculating the effect of draft at the different machines on the production and cost of the yarn made.

303. Combing and Mule Spinning.

Sliver and ribbon lap machines. Construction of the different machines. Methods of setting and operating same.

Combers. — The different kinds of combers used; their speeds and productions. Comber setting and adjusting and methods of operating.

Roll varnishing. The percentage scale and its use. Practice work in setting and operating the different combers.

Calculations for speeds, drafts, productions, etc., on the lap machines and combers.

Mules. — The spinning mule and its uses. The special features of the mule. Description of the construction and operation of the different parts of the mule. Calculations for speeds, drafts, etc., and all calculations required in making changes.

Practice work in laying out and carrying through the work for making different counts of yarn from the raw stock to the finished thread.

304. Twisting and Cotton Classing.

The Object of Twisting. — Different styles of twisters used. Wet and dry twisting. Direction of twist. Effect of twist on the strength, weight or counts.

Preparing yarn for twisting.

Making ply threads, cords, cordonnet and sewing threads.

Sizes of rings and spindle speeds for different threads. Calculations for speeds, twists and productions.

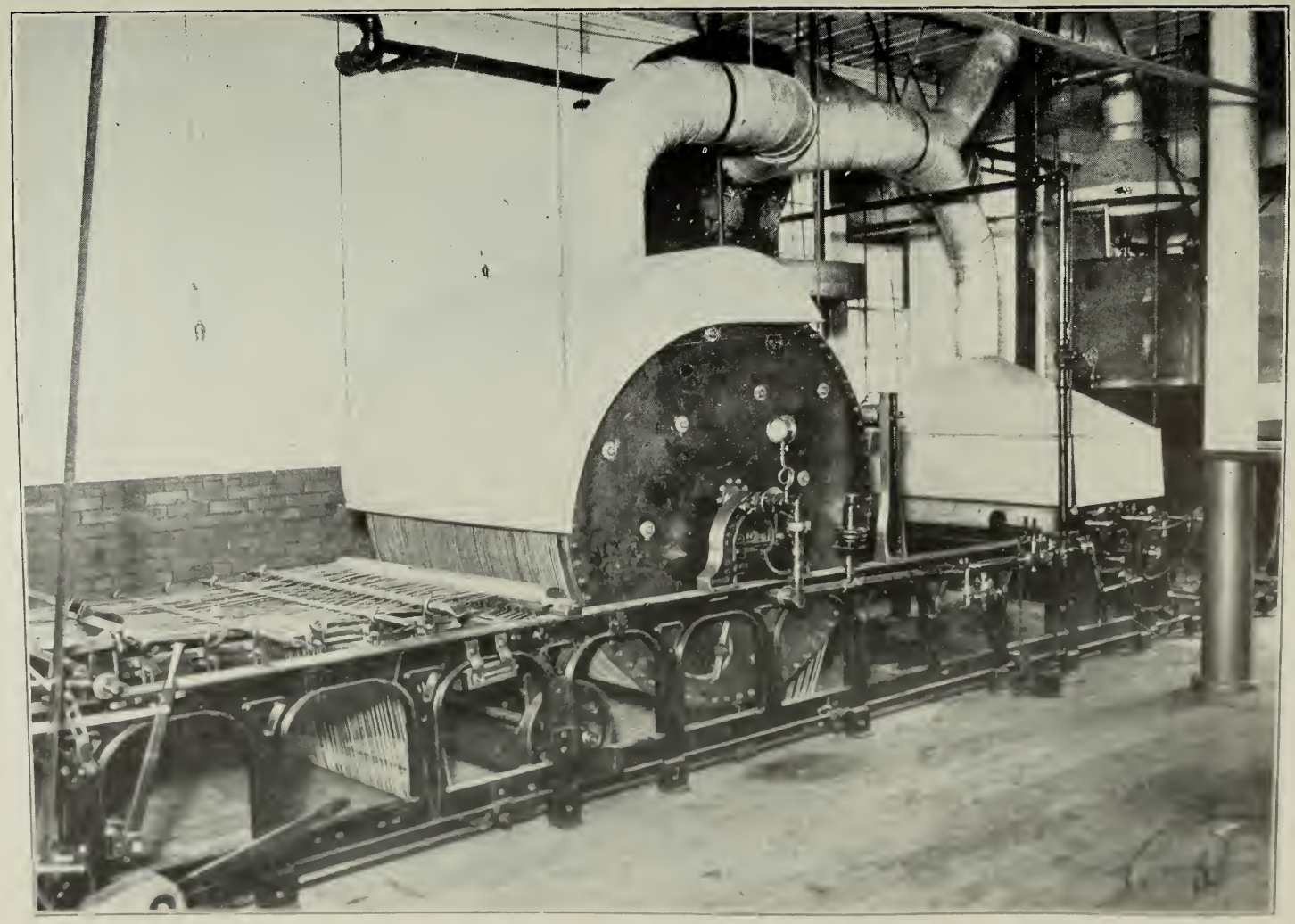
Cotton Classing. — Different species of cotton plants.

Cultivation of cotton. The different varieties of cotton and the class of goods for which they are best adapted.

Cotton picking, ginning, baling and marketing. The selection of cotton for different classes of goods.

Cotton grading and stapling.

Practice work in running work from raw stock to spinning and twisting.



Warp Preparation Department, showing Slasher

305. Test Work and Roller Covering.

Test Work. — Testing different classes of cotton and comparing results for waste removed and strength of yarn made. Testing different methods of handling cotton, using different speeds; drafts and numbers of processes used and comparing results.

Roller Covering. — Covering top roll and under clearers.

Cutting, piecing, drawing on, burning down and burnishing.

306. Yarn Testing and Comber Reneedling.

Yarn Testing. — Testing yarns for weight or counts, breaking weight (skein or single). Inspecting yarn, testing for moisture, amount of twist in single or ply yarn. Testing for contraction in single yarn; for contraction or expansion in ply threads. Testing for elasticity.

Comber Reneedling. — Cleaning off, setting needles, soldering on, building half laps, polishing and finishing same.

Practical work in running tests through the machines.

TEXTBOOKS AND LECTURE SHEETS USED IN THE SCHOOL.

Chemistry Department.

Morgan and Lyman's "Chemistry," Noyes' "Qualitative Analysis," Talbot's "Quantitative Analysis," Moore's "Outlines of Organic Chemistry," Blanchard's "Synthetic Inorganic Chemistry," Smith's "General Chemistry for Colleges."

Mechanical Department.

"Practical Mechanics," Hale; W. H. Timbie's "Essentials of Electricity."

Other Departments.

No textbooks are used in the departments other than those named above. Lectures are prepared by the heads of the departments covering the work in detail, multigraphed, and sold to the students at cost. These, with design books, design pads and notebooks, constitute the working material to be provided by students.

EVENING CLASSES.

Evening instruction, similar to the day, on the same machinery and by the heads of the day departments assisted by practical skilled men from the mills, is given for the benefit of workers in local mills and machine shops. The instruction in the evening classes is divided into sections so as to give the greatest possible facilities to the students in these classes.

Certificates are granted to all students in the evening classes who have successfully completed the equivalent to two years' work, two evenings a week. The certificate states the subjects that the student has passed in, and the length of time he has devoted to the work.

Evening students are enrolled at the commencement of both the fall and spring terms. The subjects taken up in the different evening courses follow the detailed topics as specified on pages 30–49.

Students enrolling in the regular Chemistry and Dyeing Course are required to make a deposit of $5 for breakage. In case the breakage caused by any student does not equal the amount of his deposit, the balance is returned to him at the end of the school year.

The school is in session four evenings a week for twenty-six weeks, — Monday, Tuesday, Thursday and Friday, from 7.30 to 9.15 for all classes except those taking the Chemistry and Dyeing Course. Those classes are held two nights a week from 7 to 10.30.

For terms of admission, see page 56 of this catalogue.

COURSES OF INSTRUCTION, EVENING CLASSES.

Carding and Spinning Department.

Picking and Carding: one term, two evenings a week.

Advanced Picking and Carding: one term, one evening a week.

Combing: one term, two evenings a week.

Drawing and Roving Frames: one term, two evenings a week.

Advanced Drawing and Roving Frames: one term, one evening a week.

Ring Spinning and Twisting: one term, two evenings a week.

Mule Spinning: one term, two evenings a week.

Cotton Sampling: one term, two evenings a week.

Advanced Calculations in Carding and Spinning: one term, two evenings a week.

Weaving and Warp Preparation Departments.

Spooling, Warping and Slashing: one term, two evenings a week.

Plain Loom Fixing: one term, two evenings a week.

Fancy Loom Fixing: one term, two evenings a week.

French, Portuguese and Polish Classes in Loom Fixing.

Advanced Calculations in Weaving: one term, two evenings a week.

Warp Drawing for Women: one term, two evenings a week.

Designing Department.

Elementary Designing: one term, two evenings a week.

Advanced Designing: one term, two evenings a week.

Elementary Analysis: one term, two evenings a week.

Advanced Analysis: one term, two evenings a week.

Jacquard Designing: one term, two evenings a week.

Knitting Department.

Special Knitting: two evenings a week each term.

Engineering Department.

Mechanical Drawing: one year, two evenings a week.

Machine Drawing: one year, two evenings a week.

Descriptive Geometry: one term, two evenings a week.

General Engineering Drawing: one term, two evenings a week.

Machine-shop Practice: one year, two evenings a week.

Advanced Shop Work: one year, two evenings a week.

Steam Engineering, Boilers: one term, one evening a week.

Steam Engineering, Engines: one term, one evening a week.

Electrical Engineering, Elementary Electricity: one term, two evenings a week.

Electrical Engineering, Direct Current Machinery: one term, one evening a week.

Electrical Engineering, Alternating Current Machinery: one term, one evening a week.

Chemistry Department.

General Chemistry: one year, one evening a week.

Qualitative Analysis: one year, one evening a week.

Quantitative Analysis: one year, one evening a week.

Organic Chemistry: one year, one evening a week.

Textile Chemistry I: one year, one evening a week.

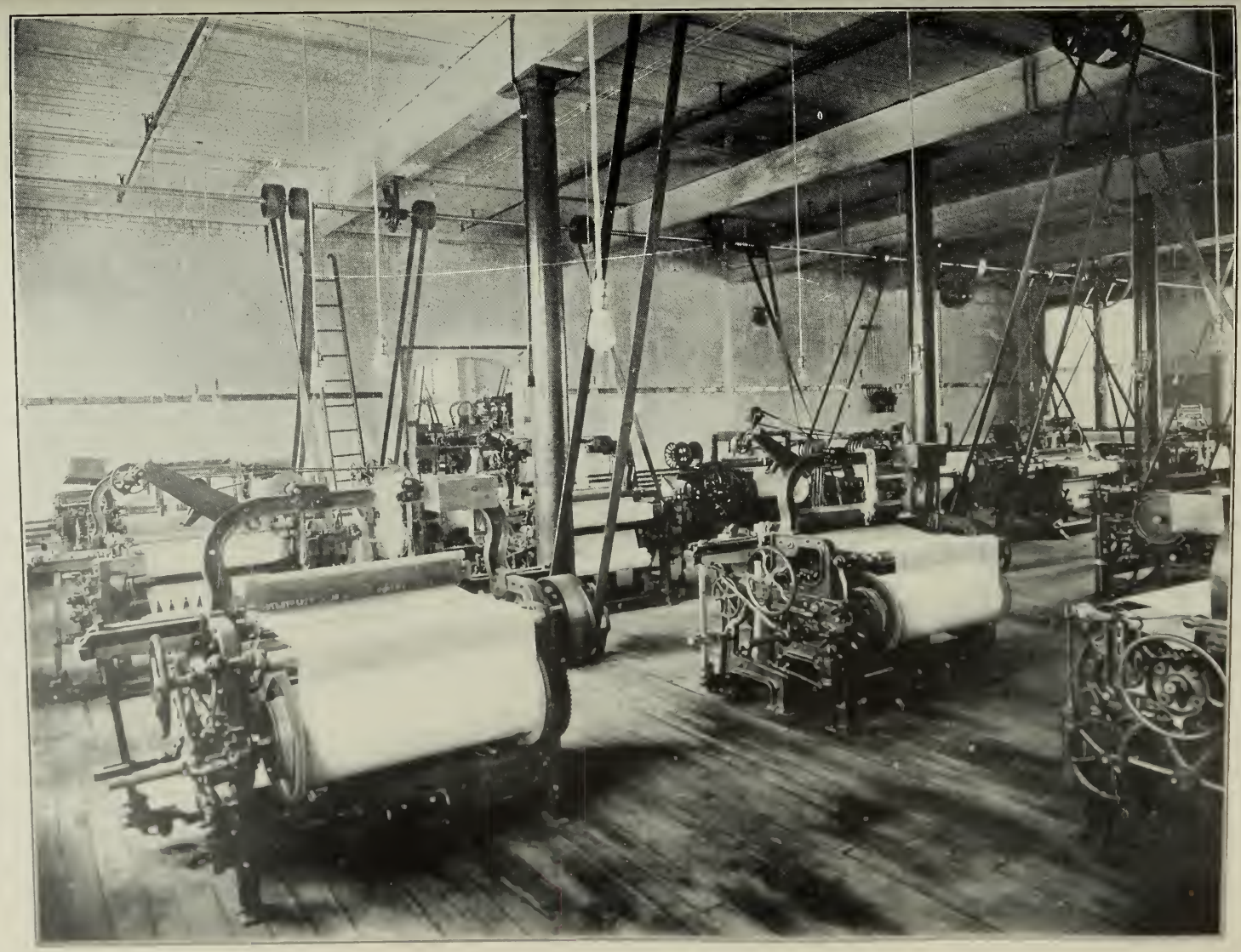
Textile Chemistry II: one year, one evening a week.

Dyeing I: one year, one evening a week.

Dyeing II: one year, one evening a week.

Dyeing III: one year, one evening a week.

Converting Cotton Piece Goods: one year, one evening a week.



Weaving Department, showing Plain-weave Room

Mathematics.

Cost Finding: one term, one evening a week.
Arithmetic: one term, two evenings a week.
Mill Calculations: one term, two evenings a week.

Evening Diploma Courses.

The school diploma will be granted to those students of the evening classes who successfully complete the work specified under the following courses: —

I. Carding and Spinning. — Picking and Carding, Drawing and Roving Frames, Combing, Ring Spinning and Twisting, Mule Spinning, Cotton Sampling, Advanced Calculations in Carding and Spinning, Mechanical Drawing, Advanced Drawing.

II. Weaving and Designing. — Spooling, Warping and Slashing, Plain Weaving and Fixing, Fancy Weaving and Fixing, Elementary Designing and Cloth Construction, Advanced Designing and Cloth Construction, Jacquard Designing, Cotton Sampling, Mechanical Drawing, Advanced Drawing.

III. Chemistry and Dyeing. — General Chemistry, Qualitative Analysis, Quantitative Analysis, Organic Chemistry, Textile Chemistry I, Textile Chemistry II, Dyeing I, Dyeing II, Dyeing III, Mechanical Drawing, Advanced Drawing.

Courses for Women.

Several courses are open for women in both the day and evening classes, and a number have pursued them successfully. They are as follows: —

Textile Designing.
Chemistry and Dyeing.
Cost Finding.
Cotton Sampling.
Warp Drawing.

GENERAL INFORMATION.

CONDITIONS OF ADMISSION TO DAY CLASSES.

Candidates for admission to the regular day courses must be at least *sixteen* years of age. Those who have been students of other technical institutions, colleges or universities are required to furnish a certificate of honorable dismissal from those institutions. Candidates having a graduate's certificate from a high school or other educational institution of equal standing are admitted without examination. Other applicants for admission to courses other than the Chemistry and Dyeing Course are required to undergo examinations in arithmetic, English, and commercial geography. Candidates for the Chemistry and Dyeing Course are required to pass, in addition, examinations in elementary algebra and plane geometry.

A candidate, whether desiring to be enrolled on certificate or by passing the entrance examination, must fill out an application blank, which should be delivered at the school as early as possible before the opening of the year.

Applicants desiring to take up special studies in the school may be admitted, provided their applications are approved by the President. Such students shall be known as specials, and, upon satisfactory completion of their work in the school, shall be given certificates stating the work they have covered and the time they have been in attendance.

No applicant is admitted to the regular courses of the school after the first four weeks unless he has already covered the work of the school for the time preceding the date of his application; nor shall any change in any student's course be made after the first four weeks of admission except by permission of the President.

ENTRANCE EXAMINATIONS FOR DAY STUDENTS.

The examinations for those desiring to enter the school at the opening of the fall term of 1919 will be held at the school only, on Wednesday, June 11, and on Tuesday, September 9, at 9 A.M.

The detailed topics dealt with in the entrance examinations are as follows: —

Algebra, to quadratics; geometry, plane geometry. Required for admission to Chemistry Course only.

Arithmetic.

Definitions, addition, subtraction, multiplication, division, factors, multiples, cancellation, fractions, decimals, percentage, interest, ratio and proportion, square root, compound quantities, mensuration, metric system.

English.

The candidate will be required to show his ability to spell, capitalize and punctuate correctly; to show a practical knowledge of the essentials of English grammar, a good training in the construction of the sentence, and familiarity with the simple principles of paragraph division and structure.

He will be required to write a business letter, and one or more short articles on subjects assigned from which he may select. Ability to express himself clearly and accurately will be considered of prime importance.

Commercial Geography.

Farm products of the United States, where raised; our mines, and where located; our manufactures, and where established; our exports, and to what countries; our imports, and from what countries; our transportation facilities.

CONDITIONS OF ADMISSION TO EVENING CLASSES.

Candidates for admission to evening classes must be at least *fourteen* years of age.

Those desiring admission to the chemistry department and the steam and electrical departments must pass examinations in arithmetic and English, as prescribed for admission to the day classes.

Those desiring to enter any of the courses in the other departments must satisfy the head of the department which they desire to enter that they have sufficient knowledge to be benefited by the instruction offered.

FEES.

Day Students. — No tuition fee is charged day students who are residents of Massachusetts. For students who come from outside the State of Massachusetts the fee is $150 a year, payable in advance in two equal installments in September and January. No student shall be admitted to the classes until his tuition is paid. No fees are refunded except by special action of the Board of Trustees.

The above fee includes admission to any of the evening classes in which there is accommodation, and which the day students may desire to attend.

A deposit of $10 is required of all day students taking the regular Chemistry and Dyeing Course. A deposit of $5 is required of students taking chemistry in connection with any other course. This deposit covers cost of any breakage that may occur. Any unexpended balance is returned at the end of the year. To students coming from outside the State of Massachusetts a further charge of $10 for chemicals is made.

Students are required to supply themselves with such books, tools and materials as are recommended by the school, and pay for any breakage or damage that they may cause in addition to the above-named fee. A fee of $3 is

Weaving Department, showing Fancy-weave Room

charged each day student, to be used for assisting in the maintenance of athletics in the school.

Evening Students. — No tuition fee is charged evening students. Students enrolled in the Chemistry and Dyeing Course are required to make a deposit of $5 for breakage. In case the breakage caused by any student does not equal the amount of his deposit, the balance is returned to him at the close of the school year. Evening students are required to supply themselves with such books and materials as are recommended by the school, but this charge is small.

SCHOOL HOURS.

The school hours for the day classes are from 8.30 to 12 each morning except Saturdays, with afternoon sessions from 1.30 to 4.30 except Saturdays. For sessions of evening classes see page 56.

EXAMINATIONS, CERTIFICATES AND DIPLOMAS.

Written examinations are held twice a year, and other tests from time to time to determine the standing of students in their work.

The final examination is held at the end of the spring term. Results of these examinations, together with the student's marks recorded from recitations, practical demonstrations and student's books, are taken into account in ranking students at the end of each year and for graduation. Unsatisfactory progress necessitates the student's repeating his studies.

Diplomas are given on the satisfactory completion of a course of study extending over a period of three years in connection with each course, if the student's record is otherwise satisfactory.

Students taking special courses, in most cases, are entitled to a certificate if they honorably and satisfactorily complete the course of instruction scheduled.

Day students are required to spend as much time daily out of school hours in study, such as recording lectures and other notes, as may be necessary to maintain proper standing. The students' books are examined by the instructors periodically, and the care and accuracy with which they are kept is considered in ranking students.

CONDUCT.

Students are required to conduct themselves in an orderly and gentlemanly manner while in attendance at the school. When the conduct of any student is considered by the President of the school detrimental to its best interests, he will be suspended by him and the case reported to the Board of Trustees for action.

Any student who presents at any time work as his own which he has not performed, or tries to pass an examination by dishonorable means, shall be regarded as having committed a serious offence.

Students shall exercise due care in the use of the school apparatus and machinery. All breakages and accidents must be reported at once to the instructor in charge, and the student will be held liable for any willful damage or the result of gross carelessness.

ATTENDANCE.

Day students taking the regular courses are required to attend every exercise of the school; special students, every exercise called for by their schedules. For every case of absence or tardiness students must present an excuse to the President. A certain number of unsatisfactory excuses will render the student liable to suspension and further action if cause is sufficient.

When the attendance of an evening student is unsatisfactory he will render himself liable to be dropped from the school.

BOARD AND ROOMS.

New Bedford is unusually desirable as a residential city, and students will find numerous houses of private families and boarding houses where they may obtain room and board.

No requirements are made as to residence of out-of-town students, although facilities are given by having addresses of suitable houses on file at the school.

No definite estimate can be made of the cost, as this depends entirely on the tastes of the student, but board and room may be obtained for from $8 per week upwards.

TOOLS AND MATERIALS.

Students are required to purchase such materials, text-books, tools and apparatus as may be required from time to time by the school authorities, or make deposits on such as are loaned to them. The supplies required vary with the courses for which the students enter, the cost being from $8 to $15 per year.

LIBRARY.

The school maintains a library that contains all the best works on carding and spinning, weaving, designing, knitting, dyeing and mechanics; also a consulting encyclopedia and an international dictionary. Catalogues and pamphlets dealing with machinery or processes related to textile work are also on file, as are all the leading textile journals and trade papers. The students have access to the library during school hours.

ATHLETICS.

The school has an athletic association, and the students participate actively in various sports and games. There are several athletic fields open to the students for their out-door sports. The management of the school will give all

reasonable encouragement and support to the furtherance of healthful recreation and manly sports for its students.

For fee for same see page 56 of this catalogue.

THE WILLIAM FIRTH SCHOLARSHIP AT THE NEW BEDFORD TEXTILE SCHOOL.

The donation of William Firth, Esq., has established a scholarship at the New Bedford Textile School, primarily for the benefit of a son of a member or of a deceased member of the National Association of Cotton Manufacturers, furnishing to the recipient of such scholarship $120 a year for the course. Candidates for this scholarship must apply by letter only, addressed to the National Association of Cotton Manufacturers, P. O. Box 3672, Boston, Mass. The candidates must be at least sixteen years of age and furnish certificates of good moral character, and those who have been students of other technical institutions, colleges or other universities are required to furnish certificates of honorable dismissal from such institutions. Those applicants conforming to the above conditions are nominated by the Board of Government to the New Bedford Textile School, and the selection of the candidate for the scholarship is made as the result of an examination held at New Bedford, Mass. Every candidate, previous to the examination, must file an application at the school for admission, agreeing to observe the rules and regulations of the school. Candidates are eligible for any of the courses included in the curriculum of the school.

In case the son of a member or of a deceased member of the National Association of Cotton Manufacturers does not apply for the scholarship, any person eligible for entrance to the school may make application.

This scholarship will be available for the school year, commencing in the fall of 1919, for two pupils, $120 each.

Designing Department, showing Design Classroom

THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS' MEDAL.

The National Association of Cotton Manufacturers offers a medal to be awarded each year to the student in the graduating class who shows the greatest proficiency in scholarship. This is determined by an examination of the records of the students' progress throughout their studies, which are recorded and reported upon by the instructors and kept permanently on file.

The competition for this medal is open to all day students who graduate in the Complete Cotton Manufacturing Course, or to evening students who have completed studies comprised in that course and graduated therein. The association offering the medal has made it a condition of the award that at least four members of the graduating class be eligible to the competition.

EQUIPMENT.

COTTON CARDING AND SPINNING DEPARTMENT.

This department occupies nearly the entire first floor of the machinery building, and has approximately 9,000 square feet of floor surface. The equipment is large and diversified, enabling the students to become acquainted with practically all the leading makes of machines found in the carding or spinning departments of cotton mills.

A special feature of the equipment is the large number of models of the principal parts of the different machines in this department. These models are so mounted that the different settings and adjustments can be made equally as well as on the machine itself, and thus enable the student to grasp more readily the essential points, since the parts are much more readily accessible.

The department is humidified by the system of the American Moistening Company.

Picker Room.

1 Carver cotton gin.
1 Kitson roving waste machine.
1 Kitson automatic feeder.
1 Kitson porcupine opener with cleaning trunk.
1 Kitson breaker lapper with condenser and gauge box.
1 Atherton intermediate lapper.
1 Howard & Bullough finisher lapper.
1 Potter & Johnston finisher lapper.

Carding and Spinning Room.

1 Mason card.
1 Howard & Bullough card.
1 Saco & Pettee card.

1 Hetherington card.
1 Potter & Johnston card.
1 Whitin card.
1 Whitin sliver lap machine.
1 Hetherington sliver lap machine.
2 Whitin combers.
1 Hetherington comber.
1 Nasmith comber.
1 Montfort comber.
1 Mason railway head.
1 Saco & Pettee improved railway head.
1 Saco & Pettee draw frame.
1 Howard & Bullough draw frame.
1 Woonsocket draw frame.
1 Whitin draw frame.
1 Woonsocket slubber.
1 Woonsocket second intermediate.
1 Providence first intermediate.
1 Howard & Bullough second intermediate.
1 Dobson & Barlow fine roving frame.
1 Saco & Pettee fine roving frame.
1 Whitin spinning frame.
1 Howard & Bullough spinning frame.
1 Saco & Pettee spinning frame.
1 Fales & Jenks spinning frame. (Motor-driven.)
1 Fales & Jenks special spinning frame for experimental work.
1 Mason mule.
1 Hetherington mule.
2 Draper twisters.
1 Draper banding machine.
1 Fales & Jenks twister. (Motor-driven.)
1 Dronsfield card flat grinding and testing machine.
1 Dronsfield card clothing machine.
1 Hetherington camless winder.
1 Universal winder.
1 Foster doubling winder.
Equipment for roll covering and comber reneedling.

Testing Machines.

1 Moscrop single thread tester.
2 Goodbrand thread testers.
1 Goodbrand conditioning and testing machine.
1 Goodbrand inspecting machine.
2 Goodbrand yarn reels.

1 Knowles yarn balance.
1 Brown & Sharpe yarn scale.
1 Goodbrand roving reel.
1 Brown & Sharpe roving reel.
1 Percentage scale.
1 Goodbrand picker lap scale.
1 Bausch & Lomb microphotographic machine.
1 Torsion balance.
1 Comins electric psychometer.
1 Sling psychometer.
1 Conditioning closet (dry).
1 Conditioning closet (wet).
1 Twist counter with contraction and expansion attachment.
1 Scott twist counter.

Models.

1 case English spinning and twisting spindles.
1 case American spinning and twisting spindles.
2 Howard differential motions.
1 Dobson & Barlow differential motion.
1 Woonsocket differential motion.
1 Asa Lees differential motion.
1 Howard & Bullough roving frame builder motion.
1 Woonsocket roving frame builder motion.
1 Whitin spinning frame builder motion.
1 Draper twister builder motion.
1 Nasmith nipper frame.
1 Nasmith cylinder.
1 Providence roving frame swing motion.

WEAVING AND WARP PREPARATION DEPARTMENT.

This department occupies all of the second floor of the machinery building and two rooms on the third floor, and contains about 11,000 square feet of floor area. The equipment is very complete, and includes sufficient machinery to enable each student to obtain all the practical experience required in connection with his studies. All of the latest machinery is represented in this equipment, and as the machinery is made especially for use in the school it fully meets the needs of the students.

The list of machines is as follows: —

Designing Department, showing Hand-loom Room

1 Crompton & Knowles (Providence) plain cam loom.
1 Crompton & Knowles (Providence) plain and 3-harness cam loom.
1 Crompton & Knowles (Providence) plain and 4-harness cam loom.
1 Crompton & Knowles (Providence) plain and 5-harness cam loom with mechanical warp-stop motion.
4 Crompton & Knowles (Providence) plain looms.
1 Whitin plain and 3-harness cam loom.
1 Whitin plain and 4-harness cam loom.
2 Whitin plain and 5-harness cam looms.
4 Draper automatic bobbin changing looms.
1 Mason standard print cloth loom.
1 Mason plain and 5-harness cam loom.
2 Whitin 25-harness dobby looms with leno and 2 by 1 box motions.
3 Whitin 25-harness dobby looms with leno motion.
1 Whitin 20-harness dobby loom.
2 Crompton & Knowles (Worcester) 2-bar lappet looms.
1 Crompton & Knowles (Worcester) gingham loom, 4 by 1 box.
1 Crompton & Knowles (Worcester) gingham loom, 6 by 1 box.
1 Crompton & Knowles (Worcester) 25-harness dobby loom.
1 Crompton & Knowles (Worcester) 20-harness dobby loom with 4 by 1 box motion.
1 Crompton & Knowles (Worcester) 12-harness dobby towel loom with 3 by 1 box motion.
1 Stafford (Providence) 20-harness dobby loom with leno motion.
1 Stafford (Providence) 25-harness dobby loom with leno motion.
1 Stafford (Readville) automatic shuttle-changing loom.
1 Stafford 25-harness dobby loom.
1 Stafford (Readville) automatic shuttle-changing loom, with 20-harness dobby.
1 Stafford (Providence) 25-harness dobby loom with leno motion.
1 Crompton & Knowles (Providence) 20-harness dobby loom.
1 Crompton & Knowles (Providence) 20-harness double cylinder dobby loom.
1 Crompton & Knowles (Providence) 20-harness dobby loom with multiplier.
2 Crompton & Knowles (Providence) 25-harness dobby looms with leno motions.
3 Crompton & Knowles (Providence) 25-harness dobby looms with leno and 2 by 1 box motions.
1 Crompton & Knowles (Providence) rise and drop Jacquard loom with 200 hooks.
1 Crompton & Knowles (Providence) double-lift Jacquard loom with 300 hooks.
1 Crompton & Knowles (Providence) double-lift Jacquard loom with 400 hooks.

3 Kilburn & Lincoln 25-harness dobby looms.
1 Stafford (Readville) 25-harness dobby loom.
1 John Royle & Sons card-cutting machine.
4 Whitin looms.
4 Crompton & Knowles (Providence) looms.
1 Crompton & Knowles (Worcester) automatic, 2 by 1 box, gingham loom.
8 Crompton & Knowles (Providence) looms.
16-harness dobbies, low motions for two sets doups and 2 by 1 box motions.
The four Whitin and the four Crompton & Knowles looms noted above were constructed for the school and are fitted with auxiliary shafts. They are supplied with extra cams for plain or twill and satin cam work, and are to be used for taking down and setting up, timing and setting, etc.
6 dobbies. (These dobbies have been especially constructed for the school, and are mounted on benches. They can be driven by hand and are to be used for taking down and setting up, timing and setting, etc.)

There are also models for demonstrating leno motions, box motions, warp-stop motions, etc.: —

12 Drawing-in frames.
1 Draper spooler.
1 Easton & Burnham spooler.
1 Entwistle warper.
1 Entwistle ball warper.
1 Entwistle beamer.
2 Draper warpers.
1 Whitin reel.
1 Universal bobbin winder.
1 Howard & Bullough slasher.
1 Goodbrand, size "B," cloth-testing machine to test to 700 pounds.

DESIGNING DEPARTMENT.

The design classroom is located on the third floor of the recitation building, and is a large well-lighted room containing all the appliances necessary for instruction in this important subject. Special attention has been given to the method of lighting this room to give the best results, and the desks are made with special reference to the needs of the student of designing.

The hand loom work is located in a large room on the third floor of the machinery building. This room contains twenty-eight hand looms adapted to the use of students in experimental work, and in putting into practice the theory of designing, and also to enable them to produce certain of the designs that they are taught in the designing class. The room is well lighted by a saw-tooth roof.

ENGINEERING DEPARTMENT.

Instruction in the engineering department is carried on in five different rooms located in various parts of the new building. These rooms are arranged and fitted out with apparatus to meet the needs of the students following this course. The department is subdivided into the following sections: mechanical drawing, textile engineering and machine-shop work.

Mechanical Drawing.

The drafting room is located on the second floor of the new building, and is well lighted by northern and western exposures. It is equipped with independent drawing tables and lockers for the drawing boards and materials. For the students' use in connection with their drafting instruction there is a collection of models, mechanical apparatus and machine parts. On the third floor there is a swinging blueprint frame mounted on a track, and a large dark room fitted with modern conveniences for blue printing.

Steam and Electrical Engineering.

Instruction in steam and electrical engineering is given both in theory and practice. The theoretical part of the course is carried on in a large recitation room on the second floor, while the practical side is studied in the engineering laboratory in the basement of the new building. The laboratory is supplied with steam direct from the boiler room, and also has gas and water connections. For the study of electricity there is provided a source of alternating current at 110 volts and 220 volts pressure.

Machine Shop.

This department occupies about 2,800 square feet of floor surface on the first floor of the recitation building. The machinery is electrically driven and the equipment modern.

The laboratory equipment consists of the following apparatus: —

ENGINEERING.

1 12 inch by 24 inch Wetherill Corliss engine.
1 5-horsepower vertical steam engine.
1 gasoline engine.
1 $2\frac{1}{2}$ k.w. compound wound special laboratory converter.
1 boiler feed water heater.
1 oil separator.
1 3 inch by 2 inch by $3\frac{1}{2}$ inch duplex feed pump.
1 $4\frac{1}{2}$ inch by $2\frac{3}{4}$ inch by 4 inch feed pump and receiver.
1 small model steam power plant.
1 gauge tester.
1 direct-current volt ammeter.
3 alternating current ammeters.
1 current transformer.
1 wire resistance frame.
1 lamp resistance frame.
2 arc lights.
1 portable wattmeter.
1 portable voltmeter.
1 portable ammeter.
1 tachometer.
1 calorimeter.
1 polar planimeter.
1 type N Metropolitan injector.
1 portable switchboard.
3 1000-watt single phase transformers.
1 2 k.w. direct-current generator.
1 5-horsepower induction motor.
1 rheostat.
2 steam engine indicators.
1 prony brake.
1 Universal lecture table galvanometer.
1 platform counter scale.
1 blue-print frame and blue-print trimmer.
1 42 by 60 blue-print machine.
1 drafting machine.
A large assortment of minor apparatus and tools.

Testing Laboratory, Chemistry and Dyeing Department

Machine Shop.

15 engine lathes.
1 speed lathe.
1 20-inch drill.
1 20 inch by 2½ inch water tool grinder.
1 12 inch by 2 inch emery grinder.
1 plain grinder.
1 Greenfield Universal grinder, complete.
1 8 inch by 20 inch miter trimmer.
1 Universal shaping machine.
2 16-inch shaping machines.
2 Universal milling machines.
1 24 inch by 6 inch planer.
1 power hack saw.
1 scroll saw.
1 gas forge.
1 cutter and twist drill grinder.
1 portable electric tool post grinder.
2 machinists' work benches equipped with vises.
1 tool cabinet containing small tools.
1 belt lacer.
1 Universal milling attachment.
1 10-inch circular milling and dividing attachment.
1 slotting attachment and set of tools.
1 indexing attachment.
1 rack cutting attachment.
1 toolmaker's vise.
1 portable electric hand drill.
1 No. 4 Reed "Barr" single sensitive spindle drill.

Drafting Rooms.

37 drawing tables fitted with cabinets.
14 adjustable drawing tables.
39 stools.

CHEMISTRY, DYEING AND FINISHING DEPARTMENT.

This department occupies about 13,600 square feet, situated in the basement and on the first and third floors of the recitation building. This space is divided into six laboratories, a lecture and recitation room, a reading room and office for the principal of the department, and two storerooms. The general chemistry and dyeing laboratory is a large well-lighted room, 63 feet 6 inches by 20 feet, on the

first floor, and is especially designed to meet the needs of the students in the general courses. This laboratory is equipped with forty-two double desks in rows of three desks each. At the end of each row is situated the sink and dye bath. Along the wall, on the opposite end, are the hoods. For the students taking the special course in chemistry, two special laboratories are provided. These two laboratories occupy a space 40 feet by 17 feet, the main part of which is devoted to the chemical laboratory. On the northern exposure is a small laboratory for photometric, microscopic and gravimetric work. In the main special laboratory each student has desk space, 2 feet by 8 feet, and his own desk, dye bath and draught hood. Conveniently located are a large drying oven, four 10-gallon dye kettles, and one 20-gallon dye kettle. This laboratory is equipped at each desk with gas, water, steam, blast and suction in order that the student's work may be carried on with the utmost celerity conducive to the best results. The laboratory for converting cotton textiles is located in the basement. It contains all the machines necessary to demonstrate in practical proportions the operations involved in singeing, scouring, bleaching, mercerizing, dyeing, drying and calendering of cotton piece goods. This room is lighted in the best possible manner, and all matching of dyed goods is done under specially corrected electric light.

The following is the equipment of the department: —

1 spectroscope.
1 water still, Jewell No. 2.
3 Richards air pumps.
4 drying ovens.
1 power air blast and lamps.
7 analytical balances.
1 set gas apparatus according to Hempel.
1 flash point tester for oils.
1 Rabe turbine water tester.
1 furnace.
1 Emerson calorimeter.
1 electric oven.
3 microscopes.
1 water heater.

1 Orsat gas apparatus.
1 thermometer for flue gases.
1 ½-inch Tagliabue self-operated temperature controller.
1 autoclave.
1 hydro-extractor.
1 26-inch Tolhurst extractor.
1 1-horsepower motor.
1 5-horsepower motor.
1 Westphal balance.
6 balances for general laboratory work.
1 Franklin dyeing machine, complete.
1 Hussong dyeing machine.
1 Files system for drying cans.
3 large water baths for analytical work.
1 hydrogen-sulphide generator.
2 combustion furnaces.
1 Scott's viscosimeter.
1 table for electrolytic work.
1 wash singer comb.
1 Dinsmore portable sewing machine.
1 12-horsepower, 4-speed motor.
2 peroxide of sodium vats, 5 pounds' capacity.
2 carboy inclinators.
1 power grinding mill.
1 Munsell photometer with special attachment for measuring daylight.
1 6-horsepower motor, variable speeds.
1 set apparatus for instructor's laboratory.
1 single-burner gas singer complete, with aid pump and spark extinguisher.
1 experimental piece mercerizing machine.
2 40-inch jigs equipped with rubber-covered beam rolls and special squeeze roller.
1 6-cylinder horizontal drying machine, cylinder of standard diameter, and complete with folder and special Files exhausting device.
1 2-roll husk combination and chilled iron steam-heated calender, equipped with expander and special moistening device.
1 3-roll padding machine, equipped with rubber-covered rolls and special interchangeable boxes for dyeing, starching or mercerizing, complete with folder.
1 100-pound Jefferson kier.
1 30-foot automatic tentering machine with Butterworth patent automatic clamp chain, having nickel plates and nippers with nickel inserts; machine equipped with Butterworth patent vibratory motion and two steam coils. Arranged also with compensator and washers so as to be convertible into a piece-mercerizing range.

1 set rubber-covered squeeze rolls and stand, adjustable, to be used at jigs, drying cans, or at either end of tentering frame.
1 high top cloth folder.
52 double desks with reagent bottles.
90 sets of apparatus for instruction in general chemistry.
50 sets of apparatus for instruction in qualitative analysis.
1 portable motor station.
30 sets of apparatus for instruction in quantitative analysis.
25 sets of apparatus for instruction in organic chemistry.
40 sets of apparatus for instruction in experimental dyeing and printing including —
    4 gas-heated dye kettles, 10 gallons' capacity.
    1 gas-heated dye kettle, 20 gallons' capacity.
    4,000 samples of dyestuffs.
    14 12-hole dye baths.
6 28-hole dye baths.
1 large drying chamber.
1 printing machine.
1 wooden dye beck.
1 steaming chest.
1 copper color kettle.

KNITTING DEPARTMENT.

The knitting department occupies two large connecting rooms on the top floor of the machinery building, and contains about 6,600 square feet of floor area. The equipment is very complete, there being a greater number of machines and a larger variety than can be found in any similar school in the world. The work that has been produced by the students of this department has received high praise from some of the leading experts in the knitting trade, the hosiery and underwear taking especially high rank.

The list of machines in this department is as follows: —

1 Excelsior cloth dryer.
1 Ballard electric cloth cutter.
1 Beattie 16-point, 2-thread looper.
1 Beattie 22-point, 2-thread looper.
1 Koehler 20-point looper.
1 Brinton 4-inch, 84 and 160 needle rib-top machine.
1 Brinton $3\frac{3}{4}$-inch, 108 and 188 needle rib-leg machine.
1 Brinton 4-inch, three-quarter automatic hosiery machine.
1 Brinton 16-inch automatic body machine.

Chemistry and Dyeing Department, showing Main Chemical Laboratory

1 Brinton 4½-inch, 320-needle welter and automatic knee and ankle splicing rib-leg machine, with Wildman stop-motion.
1 Brinton 3½-inch, 160-needle full automatic footer.
1 Crane 36-gauge spring needle machine.
1 Crane 15-inch spring needle rib-body machine.
1 Crane 19-inch body machine.
1 Crawford 12-end stop-motion.
1 Hemphill Manufacturing Company 3¾-inch, 200-needle automatic hosiery machine.
1 Hemphill Manufacturing Company 3¾-inch, 220-needle full automatic hosiery machine.
1 Hemphill Manufacturing Company Banner automatic footer.
2 Huse winders.
4 Jenckes full automatic hosiery machines.
1 Jones hosiery and underwear brusher.
1 Kennedy automatic band folding and cutting machine.
1 Lamb sweater machine.
1 Lamb glove machine.
1 March & Crawford 2-end stop-motion.
1 March & Crawford 4-end stop-motion.
1 March & Crawford 16-end stop-motion.
1 Mayo 3½-inch, 200-needle full automatic footer, with high-splice and double-sole attachment.
1 Mayo full automatic hosiery machine with yarn changer.
1 Mayo 3½-inch striper.
2 Mayo full automatic hosiery machines.
1 Merrow, Style 60D, 3-thread trimming and overseaming machine.
1 Merrow, Style 60H, 2-thread trimming, overseaming and hemming machine.
1 Merrow, Style 60ED, 3-thread overedging machine.
1 Merrow, Style 15A, 2-thread plain crochet machine.
1 Merrow, Style 35B, shell-stitch crochet machine.
1 Metropolitan Sewing Machine Company's machine for sewing on lace
1 Metropolitan, Style 30 T. C., toggle trimmer.
1 Payne winder.
20 dozen Pearson hosiery boards.
1 Hurricane stocking and underwear dryer.
1 Scott & Williams 3¾-inch welter, 176 and 200 needle rib-top machine.
1 Scott & Williams 3¾-inch striper, 176 and 180 needle rib-top machine.
1 Scott & Williams 4¼-inch welter, 180-needle rib-leg machine.
1 Scott & Williams 4¼-inch welter, 216-needle rib-leg machine.
1 Scott & Williams 4¼-inch welter, 276-needle rib-leg machine.
1 Scott & Williams 4¼-inch welter, 300-needle rib-leg machine, with Crawford stop-motion.
1 Scott & Williams 3¾-inch, 2-feed sleever, 220-needle machine, with Crawford stop-motion.

1 Scott & Williams 4¼-inch, 2-feed sleever, 264-needle machine.
1 Scott & Williams 10-inch, 4-feed automatic body machine, 8 by 10 cut.
1 Scott & Williams 13-inch, 8-feed automatic body machine, 10 cut.
1 Scott & Williams 20-inch Swiss rib machine, cut 12 to inch, with Crawford stop-motion.
1 Scott & Williams model K 3¾-inch, 220-needle, full automatic hosiery machine.
1 Scott & Williams model G 3¾-inch, 220-needle, full automatic half-hose machine.
1 Scott & Williams model B-3, 2½-inch, 120-needle, full automatic machine for infants' hosiery.
1 Scott & Williams top-finishing machine.
1 Scott & Williams 20-inch balbriggan machine, cut 16 to inch.
1 Scott & Williams 20-inch rib-border machine, cut 14 to inch.
1 Scott & Williams 3½-inch, 160-needle, seven-eighths automatic footer.
1 Scott & Williams bar-stitch machine.
1 Scott & Williams chain machine.
1 Scott & Williams 12-point looper.
1 Singer No. 44 lock-stitch finishing machine.
1 Singer No. 24 chain-stitch finishing machine.
1 Singer twin needle taping machine.
1 Singer No. 32–29 eyeletting machine.
1 Singer No. 68–7 button sewer.
1 Singer No. 79-1 drawer strapper.
1 Stafford & Holt 14-inch fancy sweater machine.
1 Standard Sewing Machine Company's buttonhole machine.
1 Tompkins knitting table, 22 and 36 gauge.
1 Union Special Machine Company flat bed twin needle machine.
1 Union Special Machine Company collarette machine.
1 Union Special Machine Company button-facing machine.
1 Union Special Machine Company seaming machine with Dewees trimmer.
1 Union Special Machine Company toggle grinder.
2 Union Special Machine Company twin needle covering machines.
1 Union Special Machine Company drawer finishing machine.
1 Union Special Machine Company hemming and seaming machine.
1 United Shoe Machinery Company eyeletting machine.
1 Wildman 3¾-inch, 2-feed striper and fancy pattern machine.
1 Wildman necktie machine.
1 Wildman 3½-inch ribber with selvage welt and striper.
1 Wildman 3½-inch selvage welt machine.
1 Wildman 13-inch automatic 8 and 12 cut body machine.
1 Wildman 4¼-inch sleever.
1 Wildman 18-inch Swiss rib machine.
1 Wildman 4¼-inch, 216-needle, rib-leg machine.

1 Wildman 4¼-inch, 272-needle rib-leg machine with lace attachment (Wildman machines equipped with Wildman stop-motions).
3 Crawford stop-motions.
1 Skevington floating thread cutter.
1 Foster Machine Company cone winder, 16 ends.

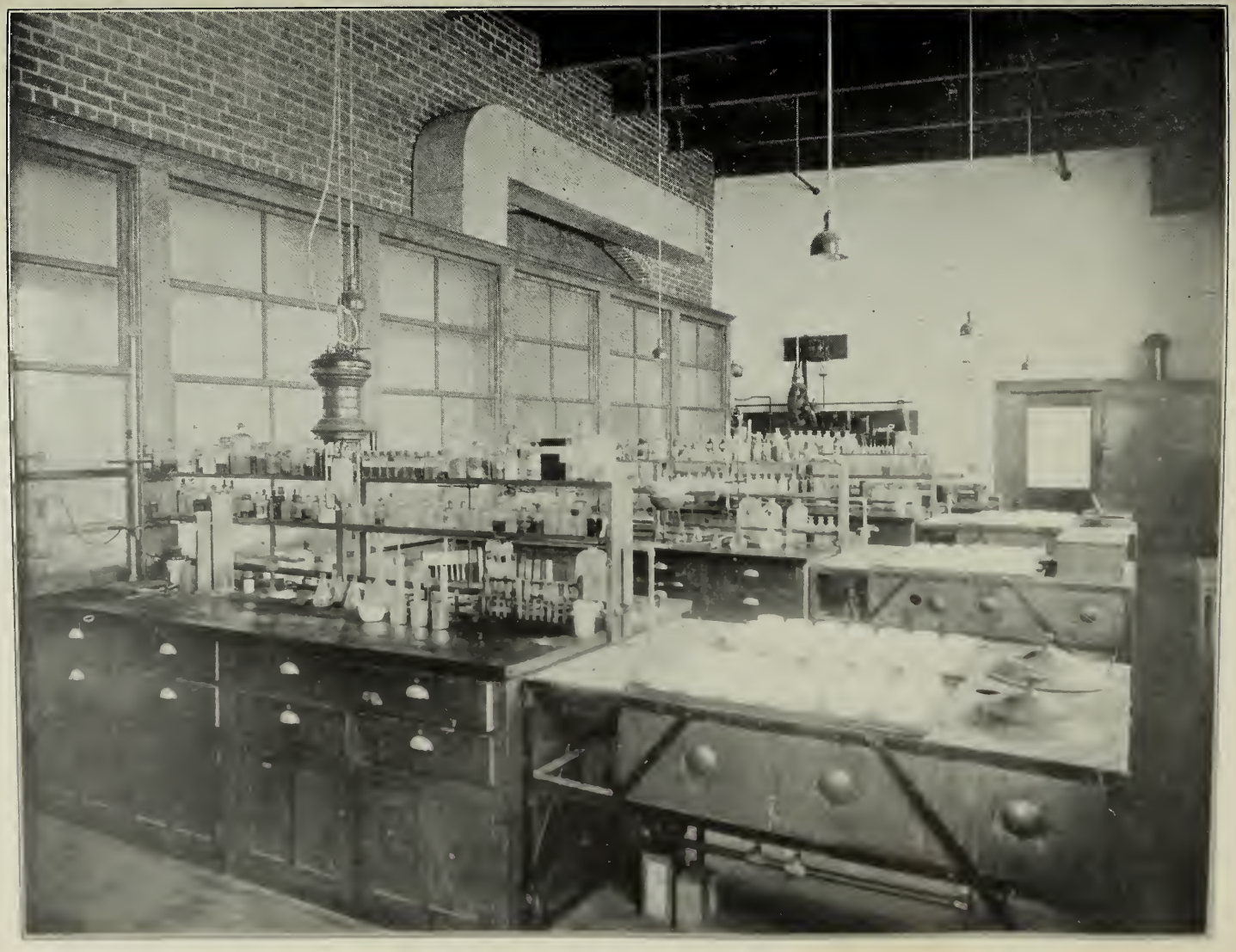
POWER, HEAT AND LIGHT PLANT.

For some years the school manufactured its power and light, but owing to the growth of the school plant it became necessary either to make a large expenditure for a new power plant or to purchase power and light. The latter plan was determined upon.

The following equipment is still retained in this department: —

1 Stirling 105-horsepower water tubular boiler.
1 B. & W. 155-horsepower water tubular boiler.
1 Foster shaking grate.
1 Dillon shaking grate.
1 Deane 4¾ inch by 2¾ inch by 4 inch duplex double outside packed plunger steam pump, connected to a receiver tank.
1 Deane 4¾ inch by 3 inch by 5 inch single steam pump.
1 National 100-horsepower feed water heater.
1 Atwood and Morrill damper regulator.
1 Sturtevant 75-horsepower horizontal center crank engine.
1 Westinghouse 50 k.w., 220-volt, 3-phase, alternating current generator, direct connected.
1 Westinghouse 4 k.w., 125-volt, direct-current generator.
1 General Electric 9½ k.w., 125-volt, direct-current generator.
1 General Electric recording wattmeter.
1 W. S. Hill 4-panel switchboard equipped with 9 Wagner indicating ammeters, 2 Wagner indicating voltmeters, 1 Thomson 50 k.w. 3-phase integrating wattmeter, 2 direct-reading k.w. meters, 14 Wagner current transformers, 1 Westinghouse combination rheostat, 1 General Electric combination rheostat, 2 Condit Electrical Manufacturing Company's 250-volt circuit breakers, all necessary switches, bus bars, etc.
2 Turbine fans.
1 Cockrane oil separator.
2 Steam separators, 1 reducing valve, 1 back-pressure valve, 1 oil filter, 1 blow-off tank.
2 Anderson No. 3 high-pressure steam traps.
5 Nason low-pressure steam traps.

3 Stirling low-pressure steam traps.
1 Reliable electric vacuum pump.
1 Ash elevator.
1 Sturtevant heating and ventilating outfit.
1 American moistening outfit.
9 General Electric induction motors, equipped with oil starting switches.
2 Westinghouse motors.



Chemistry and Dyeing Department, showing Experimental Chemical Laboratory

GRADUATION EXERCISES.

The graduation exercises for the school year 1917–18 were held in the hall of the school Tuesday afternoon, June 4. As so many of the students were in the service of the government the exercises were made very simple.

PROGRAM.

Overture, "Light Cavalry," . . . . . *Suppe*

TOLMAN'S ORCHESTRA.

Prayer.

REV. HARRY BEAL.

Thesis, "Mercerization of Cotton."

NICHOLAS R. VIEIRA.

Selection, "Canary Cottage," . . . . . *Carroll*

TOLMAN'S ORCHESTRA.

Brief Addresses.

Hon. SAMUEL ROSS and Mr. GEORGE E. BRIGGS,
Trustees of the School.

Selection, "Romance," . . . . . *Strelezki*

TOLMAN'S ORCHESTRA.

Presentation of Diplomas and Certificates to Graduates of Day and Evening Classes.

WILLIAM E. HATCH, President of the Corporation.

March, "Hands Across the Sea," . . . . . *Sousa*

TOLMAN'S ORCHESTRA.

GRADUATES — 1918.

Diploma Courses — Day Classes.

General Cotton Manufacturing.

Henry M. Jourdain
Fook W. Wong

Designing.

Louis H. Hahn

Chemistry, Dyeing and Finishing.

William H. Ogden
Burton C. Sylvester
Nicholas R. Vieira

Diploma Courses — Evening Classes.

Carding and Spinning.

Frank Holden

Certificate Courses — Day Classes.

Three-year Course.

Ellsworth S. McEwen

Two-year Course.

Molly N. Gammons
Dan E. Greene

One-year Course.

Theodore P. Morris
George W. Weller, Jr.

Theses presented.

Kier Boiling.

Burton C. Sylvester

Mercerization of Cotton.

Nicholas R. Vieira

Properties of American-made Dyestuffs.

William H. Ogden

Certificate Courses — Evening Classes.

Two Years.

Clarence F. Aldrich.
James G. Anderson.
Andrew Bauer, Jr.
Fred Beardsworth.
John Beatty, Jr.
Joseph Bellino.
Henry Berard.
James J. Cairns.
John A. Chase.
Austin B. Croshere.
John Daly.
Andrew F. Day.
Antonio J. d'Oliveira.
Norman Duckworth.
James Farren.
Edward Feeley.
Robert Gibson.
Ernest Hegele.
Edward J. Hunt.
John Kowal
Irene McCann.
Arthur J. McKay.
Jose de Medeiros.
Stephen R. Moore.
Annie Murphy.
William H. Ogden.
Norton W. Orswell.
James Rainford.
John J. Reul.
Morris Salusky.
Arthur W. Skinner.
Peter Sotnick.
William Stewardson.
Leonard Stubbs.
Michael Sullivan.
J. Arthur Tripp.
Nicholas R. Vieira.
Albert V. Wilmot.
Fook W. Wong.

Three Years.

Philip Champagne.
Alexander A. Charles.
Delphis Desnoyer.
Joaquin P. Sylvia.
Joseph E. Winterbottom.
Edward Wunschel.

Four Years.

Charles Cowley.
Thomas Mullen.
Louis Perras.
Joseph Perry.

Five Years.

Richard K. Molyneux.

Six Years.

Arthur Owen.

Seven Years.

Edward McIsaac.
Frederick D. Walton.
Walter Whitehead.

Eight Years.

Abram Brooks.

NEW BEDFORD STATE TEXTILE SCHOOL ALUMNI ASSOCIATION.

This is an association of the graduates of the day classes of the school, and evening graduates who have been awarded diplomas. In addition to its regular membership it has an honorary membership of the faculty of the school and trustees of the corporation.

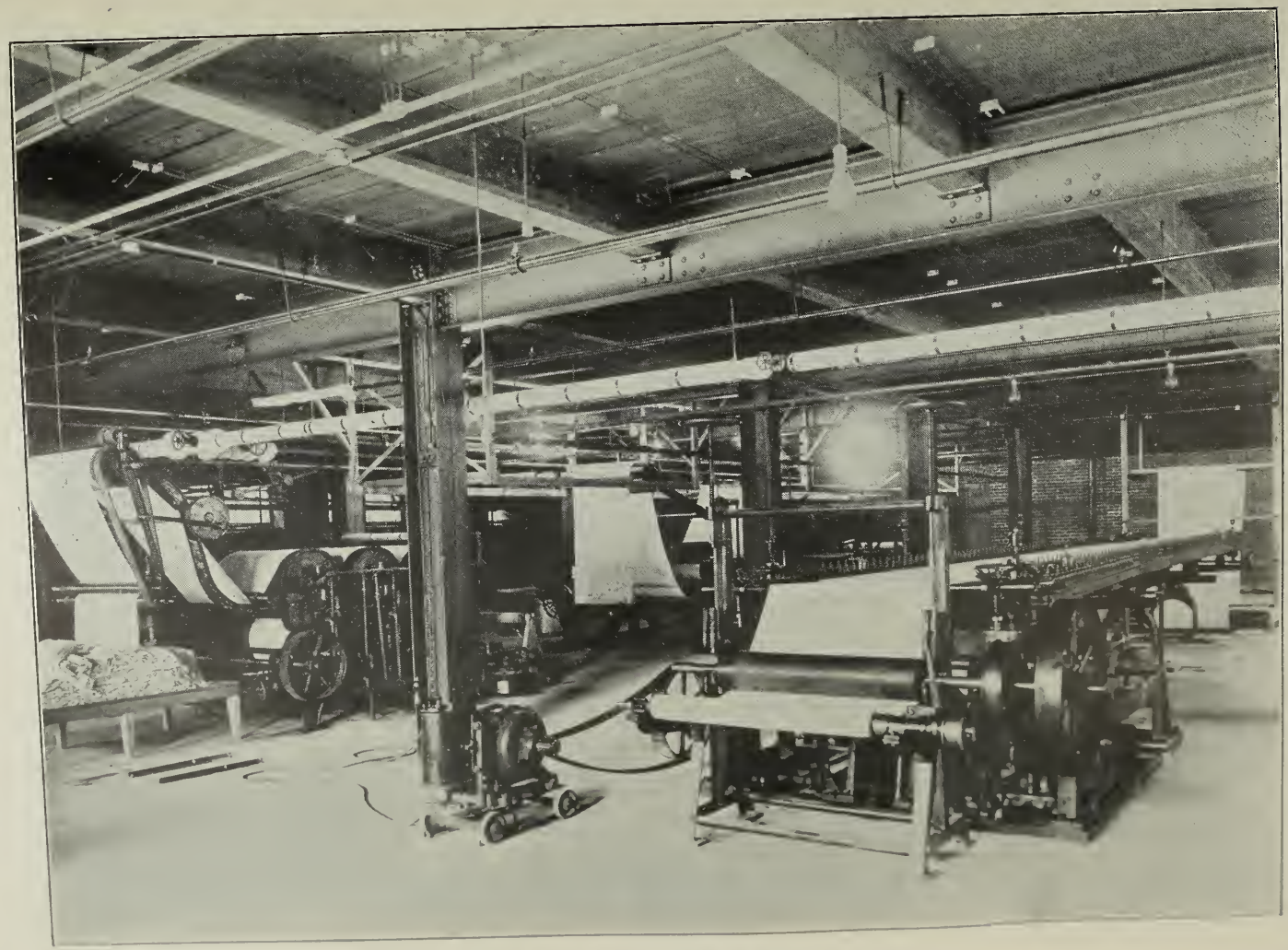
Officers for the Year.

PRESIDENT — Raymond H. Chase.

VICE-PRESIDENT — James Bolton.

SECRETARY-TREASURER — Albert H. Grimshaw.

EXECUTIVE COMMITTEE — The above officers and John M. Baldwin and Albert Goodwin.



View No. 1 in Finishing and Dyeing Room

REGISTER OF DAY GRADUATES.

1900.

Diploma Courses.

Name.	Course.	Occupation.
Wade H. Hadley,	Carding and Spinning,	Secretary and Treasurer, Gregson & Dorsett, Siler City, N. C.
Henry W. Nichols,	Weaving,	Principal, Bradford Durfee Textile School, Fall River, Mass.
Thomas G. Williamson,	Carding and Spinning,	Secretary and Treasurer, Harvey Grain Company, Chicago, Ill.

1901.

Diploma Courses.

Charles E. Buckley,	Weaving,	General Superintendent, Gosnold Mills Company, New Bedford, Mass.
Arthur R. Dickinson,	General Cotton Manufacturing,	General Manager, Lockwood, Greene & Co., Atlanta, Ga.
Thomas T. Gifford,	General Cotton Manufacturing,	With Pierce Manufacturing Company, New Bedford, Mass.
Milo L. Moss,	Carding and Spinning,	Proprietor of a tea and coffee store, New Bedford, Mass.
Nelson A. Wood,[1]	General Cotton Manufacturing,	– – – –

[1] Deceased.

1901.

Certificate Courses.

Name.	Course.	Occupation.
Thomas J. McNeeley,	Weaving,	Superintendent, Clover Cotton Manufacturing Company, Clover, S. C.
Richard Riding,	Special,	No record.
Guy P. Stubbs,	Special,	Manager of an estate, Monroe, La.

1902.

Diploma Courses.

Andrew Currie, Jr.,	General Cotton Manufacturing,	Vice-President, Erie Oil Company, Inc., Shreveport, La.
Myron C. Fish,	Carding and Spinning,	Secretary, American Supply Company, and Treasurer, Rhode Island Yarn Company, Providence, R. I.
Esley H. Forbes,	General Cotton Manufacturing,	Present address not known.
Lester E. Hawes,	Weaving; also Carding and Spinning,	Chauffeur, New Bedford, Mass.
John J. Hutchinson,	General Cotton Manufacturing,	Laundry Proprietor, Los Angeles, Cal.
John W. Osborn,	General Cotton Manufacturing,	Present address not known.
Benjamin Richards,	Carding and Spinning,	Chief Engineer, Western Factory Insurance Association, 175 West Jackson Boulevard, Chicago, Ill.

Certificate Courses.

Alberto Madero, ...	Special, ...	Present address not known.

1903.

Diploma Courses.

Archie McK. Bethea,[1]	General Cotton Manufacturing, . . .	– – – –
Bennett D. Nelme, ...	Weaving, ...	Farmer and cattle raiser, Wadesboro, N. C.
Walter Turnbull, ...	General Cotton Manufacturing, . . .	General Agent, Life Insurance Company of Virginia, Lawrenceville, Va.
Theodore Wood, ...	General Cotton Manufacturing, . . .	Director of Sales, R. J. Caldwell Company, 15 Park Row, New York City.

1904.

Diploma Courses.

Edward P. Doherty, ...	Designing, ...	Police Lieutenant, New Bedford, Mass.
Beirne Gordon, Jr., ...	General Cotton Manufacturing, . . .	Superintendent, Skenandoa Cotton Company, Utica, N. Y.
Henry J. O. Goulet, ...	General Cotton Manufacturing, . . .	Designer, Waypoyset Manufacturing Company, Central Falls, R. I.
George P. Kean, ...	Weaving, ...	Superintendent, Berkshire Cotton Manufacturing Company, Adams, Mass.
Chu Kinhow, ...	Carding and Spinning, ...	Managing Director, Pekin-Mukden Line, Chinese Government Railway.

[1] Deceased.

1904.

Diploma Courses — Concluded.

Name.	Course.	Occupation.
Ricardo J. Rivero,	Carding and Spinning,	Present address not known.
William A. Spencer,	Carding and Spinning,	Superintendent, Trainer Spinning Company, Chester, Pa.
Charles K. Taylor,	Carding and Spinning,	General Superintendent, Magnolia Cotton Mills Company, Magnolia, Miss.
Fred Taylor,	General Cotton Manufacturing,	Textile Expert, Fabric Department, Firestone Tire and Rubber Company, Akron, Ohio.
Clifford B. Terry,	Carding and Spinning,	Erector of Cotton Machinery, Whitin Machine Company, Whitinsville, Mass.
Frederick J. Young,	Carding and Spinning,	Superintendent, Bemis Cotton Mill, Bemis, Tenn.
Andrew Ybarra,	Carding and Spinning,	No record.

Certificate Courses.

Morton LeB. Church,	Special,	Secretary and Treasurer, Capitola Manufacturing Company, Marshall, N. C.
John B. B. LaFleur,	Knitting,	Present address not known.

Knitting Department, showing Underwear and Finishing Machines

1905.

Diploma Courses.

James O'H. Cazennove, . . .	General Cotton Manufacturing, . . .	Present address not known.
John J. W. Cooper, ...	General Cotton Manufacturing, . . .	Manager, Lockwood & Greene's Research Department.
Sidney W. Corson, ...	General Cotton Manufacturing, . . .	Overseer of Carding, Oneita Knitting Mills, Utica, N. Y.
William B. MacColl, ...	Designing, ...	Major, Q. M. R. C., A. E. F., Paris.
Otis P. Mills, Jr., ...	General Cotton Manufacturing, . . .	Automobile Distributor, 105 Augusta Street, Greenville, S. C.
Clifford H. Tripp, ...	General Cotton Manufacturing, . . .	Inspector of Textiles, Q. M. C., 108 Massachusetts Avenue, Boston, Mass.
Rex G. Witherbee, ...	General Cotton Manufacturing, . . .	Architect and Engineer, Utica Steam & Mohawk Valley Cotton Mills, Utica, N. Y.

Certificate Courses.

Fred L. Baldwin, ...	Special, ...	With Sulloway Hosiery Mills, Franklin, N. H.
Murray F. Barrows, ...	Special, ...	Merchant, 14,304 Detroit Avenue, Cleveland, Ohio.

1906.

Diploma Courses.

Name.	Course.	Occupation.
Richard S. DeMartin,	Carding and Spinning,	Overseer, Carding, Kilburn Mill No. 2, New Bedford, Mass.
Elmer L. Freeman,	Latch Needle Underwear Knitting,	Manager, Freeman Manufacturing Company, Detroit, Mich.
Walton Hall, Jr.,	Carding and Spinning,	Superintendent, Hall, Lincoln & Co., Moodus, Conn.
John J. O'Neil,	Latch Needle Underwear Knitting,	Optician, 389 Main Street, Springfield, Mass.
Thomas W. Williamson,	General Cotton Manufacturing,	26 South Sixth Street, New Bedford, Mass.

1907.

Diploma Courses.

Lloyd S. Delano,	General Cotton Manufacturing,	Designer and Overseer, Warren Manufacturing Company, Warren, R. I.
John H. Grady,	Chemistry and Dycing,	Salesman and Demonstrator, the J. B. Ford Company. Now serving as first lieutenant, Q. M. C., A. E. F.
S. Eugene Jackson,	Carding and Spinning,	Assistant Treasurer, Crown Manufacturing Company, Pawtucket, R. I.
William A. Lee,	General Cotton Manufacturing,	Clerk, Mills Manufacturing Company, Greenville, S. C.
Li Kung,	General Cotton Manufacturing,	Principal of Canton College, Canton, China.[1]
Lo Ting-yu,	General Cotton Manufacturing,	Chief Professor of Textile Department, Peking Technical College, Peking, China.[1]
John A. McKenzie,	Chemistry and Dyeing,	Lieutenant, Infantry, Company I, 104th Regiment, A. E. F., France.

Andrew W. Macy,	General Cotton Manufacturing,	Overseer, Cloth Room, Nashawena Mills, New Bedford, Mass.
Frank Pieraccini, Jr.,	Designing,	Fabric Expert, Goodyear Tire and Rubber Company, Akron, Ohio.
Ellis H. Thayer,	Latch Needle Underwear Knitting,	Present address not known.
Yiu Sun Tsang,	General Cotton Manufacturing,	Associate Engineer, Tsang Brothers & Co., Canton, China.[1]
Frederick J. Vera,	General Cotton Manufacturing,	Third Hand, Kilburn Mill, New Bedford, Mass.
Harold J. Walters,	Seamless Hosiery Knitting,	Assistant Superintendent, Thomas Develon, Jr., A Street and Indiana Avenue, Philadelphia, Pa.
Wong Ka Luen,	General Cotton Manufacturing,	Peking Technical College, Peking, China.[1]
George Worden,	Designing,	Overseer, Weaving, Potomska Mills, New Bedford, Mass.

1908.

Diploma Courses.

William G. Blair, Jr.,	General Cotton Manufacturing,	Principal of Carding and Spinning, Clemson Agricultural College, Clemson College, S. C.
William Booth,	Carding and Spinning,	Present address not known.
Chih Yeh Chang,	General Cotton Manufacturing,	No record.
Yee Buck Deu,	Seamless Hosiery Knitting; also General Cotton Manufacturing.	President of Sun Ming Hosiery and Underwear Knitting Company, Sun Ming, China.[1]
John V. Gallagher,	Seamless Hosiery Knitting,	No record.
Lester D. Patt,	Designing,	Chief of Cotton Goods Department, Zone Supply Offices, United States Army, Boston, Mass.
Chee Lee Tsu,	General Cotton Manufacturing,	No record.

[1] Last known address.

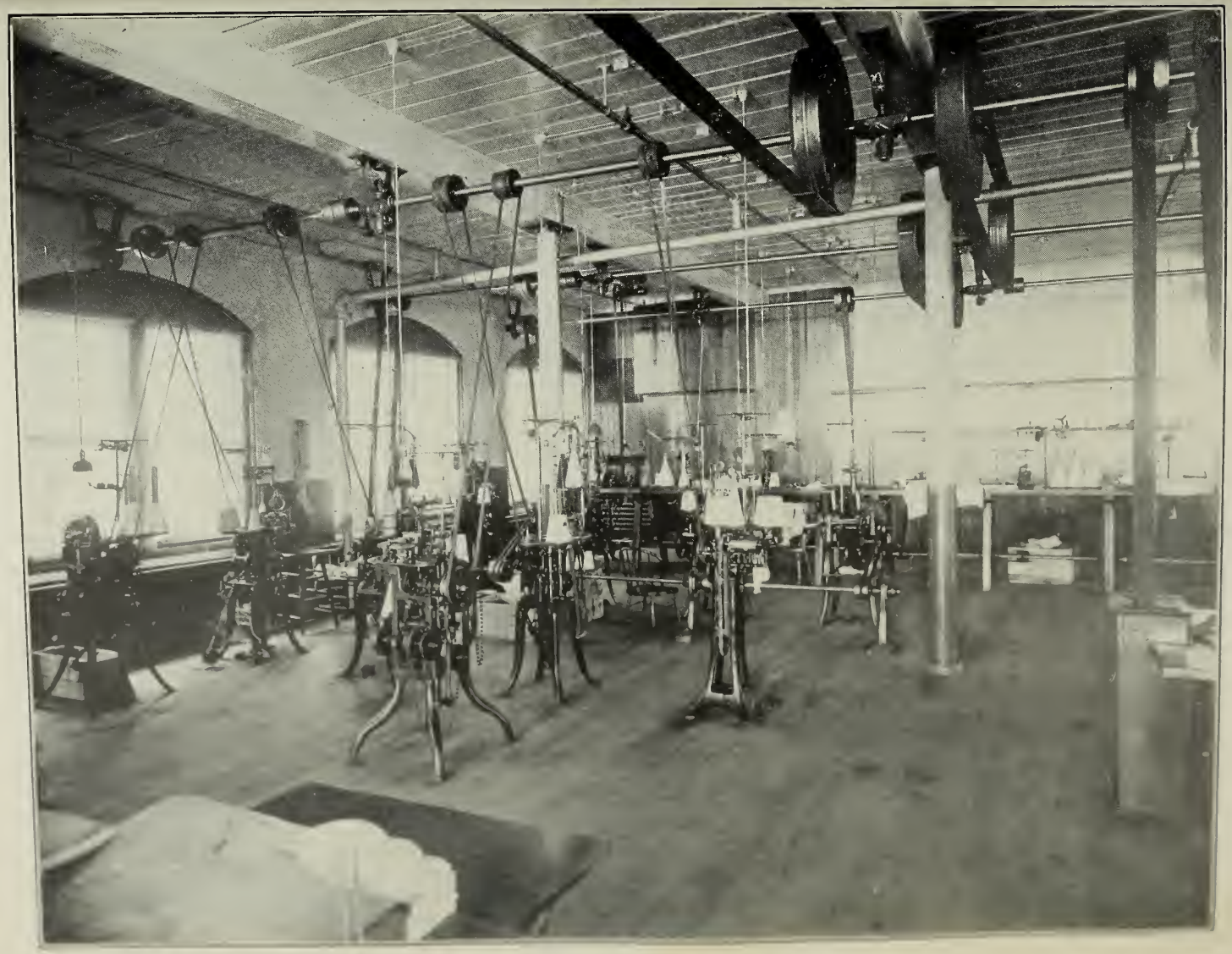
1909.

Diploma Courses.

Name.	Course.	Occupation.
Frederick J. Bister,	General Cotton Manufacturing,	With John Bister, 920 Broadway, New York City.
Alton W. Chase,	Designing,	Overseer, Carding, Gosnold Mills Company, New Bedford, Mass.
Milton C. Devoll,	Designing,	Sergeant, Medical Detachment, 54th Pioneer Infantry, A. E. F.
Max A. Freschl,	Seamless Hosiery Knitting,	Superintendent, Holeproof Hosiery Company, Milwaukee, Wis.
Philip C. Gilkey,[1]	Seamless Hosiery Knitting,	– – – –
Albert G. Neel,	Latch Needle Underwear Knitting; also Carding and Spinning.	Superintendent, Frisbie-Stansfield Knitting Company, Camden, N. Y.
Charles Pittle,	Seamless Hosiery Knitting,	Photographer, New Bedford, Mass.
Arthur E. Snyder,	Latch Needle Underwear Knitting; also Carding and Spinning.	Yarn Salesman, Percy A. Legge, 185 Summer Street, Boston, Mass.
Arthur F. Spare,	General Cotton Manufacturing,	With J. V. Spare & Co., New Bedford, Mass.
George C. Urquhart,	Chemistry and Dyeing,	Philadelphia Representative, Franklin Process Company, Providence, R. I.
Clifford L. White,	Designing,	Second Hand, Card Room, Tamarack Mill No. 2, Pawtucket, R. I.

Certificate Courses.

William J. Blades,[1]	Carding and Spinning,	– – – –



Knitting Department, showing Hosiery Machines

1910.

Diploma Courses.

Raymond H. Chase, ...	General Cotton Manufacturing, . . .	Overseer of Carding, Crown Manufacturing Company, Pawtucket, R. I.
Paul F. Gay, ...	General Cotton Manufacturing, . . .	Boss Comber, City Manufacturing Company, New Bedford, Mass.
Dana H. Gillingham, ...	Chemistry and Dyeing, ...	With Robertson & Co., Cotton Brokers, New Bedford, Mass.
Lewis G. Manning, ...	Latch Needle Underwear Knitting; also Carding and Spinning.	With Army of Occupation, Germany.

Certificate Courses.

Roger M. H. Wilcox, ...	Special, ...	Salesman, H. J. Heinz Company, Cambridge, Mass.

1911.

Diploma Courses.

Milton J. Bentley, ...	General Cotton Manufacturing, . . .	Director of Textile Department, State Trade Shop, Putnam, Conn.
Kenyon H. Clark, ...	Latch Needle Underwear Knitting, . .	Lieutenant, Company L, 43d U. S. Infantry, Vinton, La.
Harold C. Cornell, ...	General Cotton Manufacturing, . . .	Machine Assembler, Hemphill Manufacturing Company, Central Falls, R. I.

[1] Deceased.

Diploma Courses — Concluded.

Name.	Course.	Occupation.
Edward W. Dewey,	Latch Needle Underwear Knitting,	Superintendent and Buyer, Bennington Hosiery Company, Bennington, Vt.
Earl W. Dunmore,	Latch Needle Underwear Knitting,	Superintendent, Utica Knitting Company, Mill No. 7, Richfield Springs, N. Y.
Albert W. Goodwin,	Designing,	Textile Inspector, Brooklyn Navy Yard, Brooklyn, N. Y.
Carleton LeB. Hamlen,	Chemistry and Dyeing,	Inspector of Textiles, Q. M. C., New York, N. Y.
Caleb A. Hayward, Jr.,	Latch Needle Underwear Knitting,	Salesman, C. A. Hayward & Son, Confectionery Agents, Brokers and Jobbers, New Bedford, Mass.
Warren E. Holland,	Designing and Carding and Spinning,	Cotton Classer, Jenekes Spinning Company, Pawtucket, R. I.
Frank Kallish,	General Cotton Manufacturing,	Designer, Beacon Manufacturing Company, New Bedford, Mass.
Henry C. Labrode,	General Cotton Manufacturing,	Warp Tying Machine Installer, Barber-Coleman Company, Boston, Mass.
Benjamin Livesey, Jr.,	Chemistry and Dyeing,	Manager, Smith Color Company, Wauregan, Conn.
Augustus C. Macomber,	General Cotton Manufacturing,	Designer, Beacon Manufacturing Company, New Bedford, Mass.
Edward A. Robenolt,	Designing and Carding and Spinning,	Boss Comber, Nonquitt Spinning Company, New Bedford, Mass.
Carlton W. Smith,	Chemistry and Dyeing,	With N. B. Gas and Edison Light Company, New Bedford, Mass.
Perry Vincent,[1]	General Cotton Manufacturing,	– – – –

Certificate Courses.

James P. Brown,	Carding and Spinning,	With Glencairn Manufacturing Company, Pawtucket, R. I.
Robert R. Jenks,	Carding and Spinning,	Assistant Manager, Fales & Jenks Machine Company, and Secretary and Assistant Treasurer, Woonsocket Machine and Press Company, Woonsocket, R. I.
Thomas B. O'Brien,	Carding and Spinning,	Textile Machinery Buyer, W. R. Grace & Co., 7 Hanover Square, New York City.
Alfred Scheid,	Carding and Spinning,	Present address not known.

1912.

Diploma Courses.

Chen Ting-Fang,	General Cotton Manufacturing,	102 Queen's Road, Central Hongkong, China.
Francis J. Fagan,	Latch Needle Underwear Knitting,	Foreman of Underwear Department, Utica Knitting Company, Utica, N. Y.
Morton T. French,	Seamless Hosiery Knitting,	Assistant Treasurer and General Manager, French Knitting Company, Pawtucket, R. I.
Frank E. Hinckley,	Chemistry and Dyeing,	Chief Pharmacist's Mate, United States Navy.
Edward E. Judge,	General Cotton Manufacturing,	Designer, Gosnold Mills Company, New Bedford, Mass.
Ernest A. Scholze,	Designing,	Assistant Designer, the Paul Whitin Manufacturing Company, Northbridge, Mass.
Luis C. Visbal,	Seamless Hosiery Knitting,	Manager, Hosiery Department, Espriella & Cia., Cartagena, Colombia, S. A.

[1] Deceased.

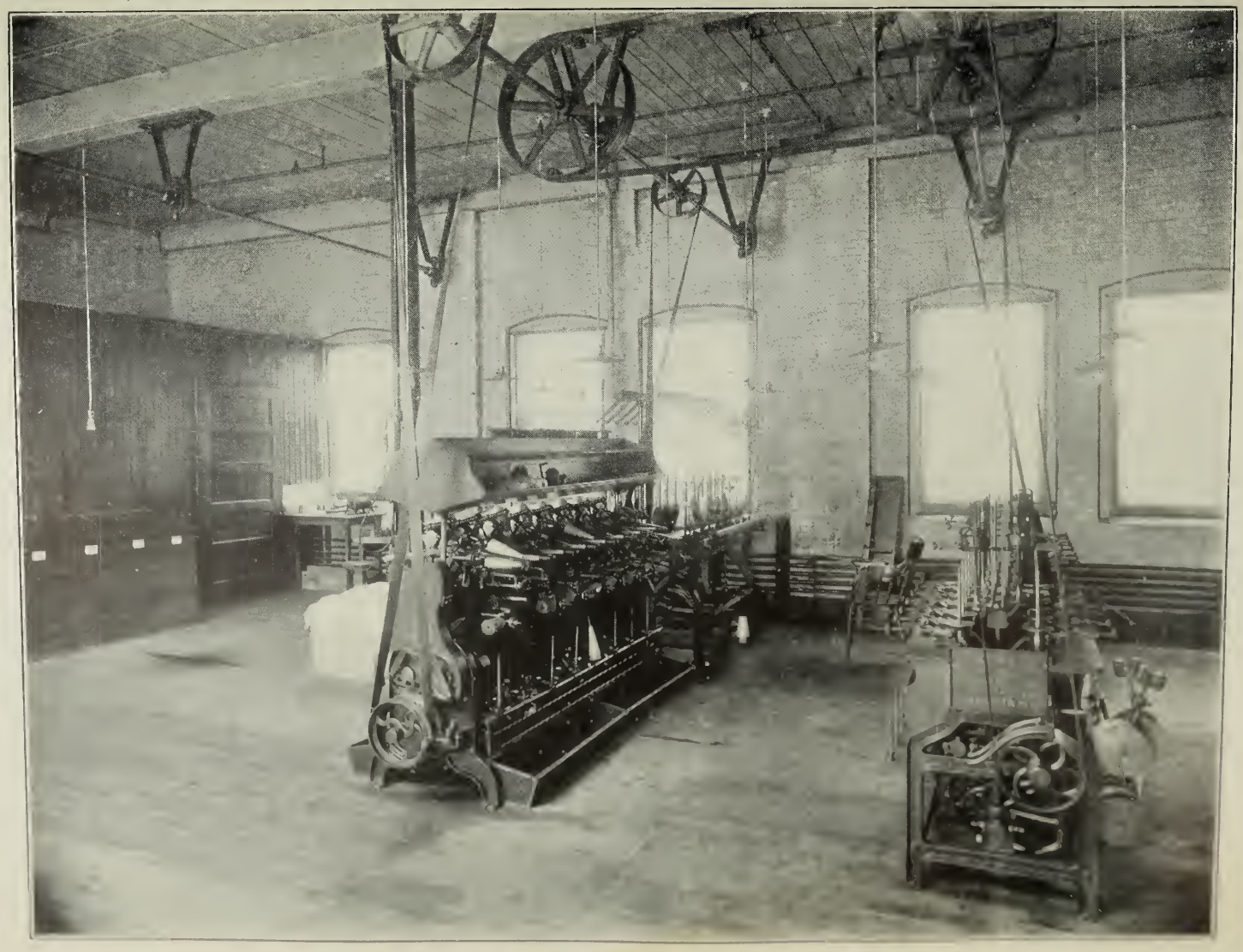
1913.

Diploma Courses.

Name.	Course.	Occupation.
Edward W. Clarke,	General Cotton Manufacturing,	No record.
Elton R. Darling,	Chemistry and Dyeing,	Research and Industrial Chemist, Ellis-Foster Laboratories, 92 Greenwood Avenue, Montclair, N. J.
Rudolph C. Dick,	General Cotton Manufacturing,	Designer, Cabot Manufacturing Company, Brunswick, Me.
Bertram Goldberg,	Seamless Hosiery Knitting,	Chief Chemist, Julius Kayser Knitting Company, Brooklyn, N. Y.
Ralph S. Howland,	General Cotton Manufacturing,	Purchasing Agent, Lewis Manufacturing Company, Walpole, Mass.
Maurice A. Lewis,	Chemistry and Dyeing,	Head Chemist, Walter Sykes & Co., 85 Water Street, New York City.
Edward Mechaber,[1]	Seamless Hosiery Knitting,	– – – –
Stephen R. Moore,	Designing,	Superintendent, Naushon Weaving Company, New Bedford, Mass.
Myrtland F. Palmer,	General Cotton Manufacturing,	A. E. F.

Certificate Courses.

Justo D. de la Espriella,	Carding and Spinning and Chemistry,	Manager, Espriella & Cia., Cartagena, Colombia, S. A.
Peirce D. Tourtellot,	Carding and Spinning,	Foreman, Whitin Machine Works, Whitinsville, Mass.



Knitting Department, showing Winders

1914.

Diploma Courses.

Raymond A. Burt,	Chemistry and Dyeing,	Chemist, the Republic Rubber Company, Youngstown, Ohio.
Charles E. Fessenden,	Designing,	Cotton Goods Broker, 72 Leonard Street, New York City.
Walker B. Mason,[1]	General Cotton Manufacturing,	- - - -

Certificate Courses.

Edward F. Dolan,	Carding and Spinning; also Seamless Hosiery Knitting.	Second Lieutenant, 304th Supply Train, A. E. F.
Lincoln Hall,	Cotton Yarn Preparation and Weaving,	Cotton Classer, Lockwood Company, Waterville, Me.
Bryden Pease,	Cotton Yarn Preparation, Weaving and Designing.	With Hazlip-Hood Cotton Company, Greenville, Miss.
Edward A. Thayer,	Carding and Spinning; also Latch Needle Underwear Knitting.	Assistant to Secretary, Lebanon Mills Company, Pawtucket, R. I.
Joseph A. Livingstone,	Special.	Present address not known.

[1] Deceased.

1915.

Diploma Courses.

Name.	Course.	Occupation.
Robert E. Achorn, Jr.,	General Cotton Manufacturing,	Designer and Assistant Superintendent, Grosvenor Dale Company, North Grosvenor Dale, Conn.
William W. Allan,	General Cotton Manufacturing,	Second Class Machinist's Mate, U. S. N. R. F.
Alfred J. Bearcovitch,	General Cotton Manufacturing,	Second Hand in Dye House, Imperial Printing and Finishing Company, Bellefont, R. I.
Leo A. Bessette,	General Cotton Manufacturing,	Captain, Infantry, United States Army.
John J. Blake,	General Cotton Manufacturing,	– – – –
Antonio J. de la Espriella,	Designing,	With Espriella & Cia., Cartagena, Colombia, S. A.
Niles W. Goward,	General Cotton Manufacturing,	North Easton, Mass.
Raymond M. Jenks,	General Cotton Manufacturing,	Cost Clerk, West Boylston Manufacturing Company, Easthampton, Mass.
C. Stanley Kinney,	General Cotton Manufacturing,	Machinist's Mate, First Class, U. S. S. Destroyer "Israel."
Alexander Shill,	General Cotton Manufacturing,	Field Clerk and Inspector, Air Nitrates Corporation, Sheffield, Ala.
Harold B. Sturtevant,	Chemistry and Dyeing,	Chief Chemist, Lonsdale Bleachery and Dye Works, Lonsdale, R. I.
Benjamin Waldstein,	General Cotton Manufacturing,	Salesman, S. H. Waldstein, 10 High Street, Boston, Mass.
Thomas G. Wong,	General Cotton Manufacturing,	Engineer, Anderson, Meyer & Co., Shanghai, China.

Certificate Courses.

Albert Brend,	Designing and Weaving,	Draftsman, Crompton & Knowles Loom Works, Worcester, Mass.
Frank L. H. Chow,	Special,	Principal, Ten-Chow Textile School, Shanghai, China.
Russell E. Goff,	Carding and Spinning,	Cotton Broker, Boston, Mass.
Allan K. Hamer,	Mechanical Drawing and Machine-shop Practice.	With Continental Screw Company, New Bedford, Mass.
William L. O'Brien,	Mechanical Drawing and Machine-shop Practice.	Tool Designer, Davenport Machine Company, New Bedford, Mass.
Howland Wentworth,	Carding and Spinning,	With Wentworth Clothing Company, New Bedford, Mass.

1916.

Diploma Courses.

Carlton S. Blossom,	General Cotton Manufacturing,	Corporal, Co. A, 10th Battalion Signal Corps.
Russell Hathaway,	General Cotton Manufacturing; also Special Chemistry and Dyeing.	Textile Expert, with Everett H. Hinckley, 12 Pearl Street, Boston, Mass.
Harold W. Hayward,	General Cotton Manufacturing,	Private, Headquarters Company, 61st Infantry, A. E. F.
Howard B. Whitney,	General Cotton Manufacturing,	Cost Accountant and Assistant Paymaster, Passaic Cotton Mills, Rotch Mill Department, New Bedford, Mass.

1916.

Certificate Courses.

Name.	Course.	Occupation.
Lawton Crossley,	Chemistry and Dyeing,	Chemist, Montgomery, Ward & Co., Chicago, Ill.
Albert H. Davis,	General Cotton Manufacturing,	With Blackstone Manufacturing Company, Blackstone, Mass.
Luis C. de la Espriella,	General Course Subjects,	With Espriella & Cia., Cartagena, Colombia, S. A.
Paul R. Gast,	Chemistry and Dyeing,	Student, Brown University, Providence, R. I.
Albert H. Grimshaw,	Chemistry and Dyeing,	Assistant Instructor in Chemistry and Dyeing Department, New Bedford Textile School.
Shao-Yu Hung,	Chemistry and Dyeing,	Chemist, S. D. Warren & Co., Cumberland Mills, Me.
Horace E. Johnson,	Chemistry and Dyeing,	Sergeant, with Army of Occupation, Coblenz, Germany.
Edmund Lenhart,	Chemistry and Dyeing,	Hospital Apprentice, U. S. N. R. F., Newport, R. I.
David J. Lonergan,	Designing and Weaving,	Machine Operator, United States Frankford Arsenal, Philadelphia, Pa.
William F. Northrop,	General Course Subjects,	Salesman, Hopedale Manufacturing Company, Milford, Mass.
Chen-chi Pan,	Chemistry and Dyeing,	Student, Massachusetts Institute of Technology, Cambridge, Mass.
George V. Riley,	Chemistry and Dyeing,	Supply Sergeant, 302d Infantry, Company D, Camp Devens, Mass.
David W. Royster,	Knitting and Cotton Yarn Preparation,	Manager, Olive Hosiery Manufacturing Company, Shelby, N. C.

Textile Engineering Department, showing Section of Mechanical Drafting Room

Diploma Courses.

Harry Ambler,	Chemistry, Dyeing and Finishing,	252 M. P. Co., A. P. O. 926, A. E. F.
Cheng Q. Amona,	General Cotton Manufacturing,	Honolulu, Hawaii.
James W. Blossom,	General Cotton Manufacturing,	Second Class Machinist's Mate, U. S. N. R. F.
Robert J. Deane,	Chemistry, Dyeing and Finishing,	Assistant Chemist, American Printing Company, Fall River, Mass.
John T. DeLay,	Chemistry, Dyeing and Finishing,	Hingham, Mass.
Hersey W. Farrar,	General Cotton Manufacturing,	Assistant Designer, Acushnet and Hathaway Mills, New Bedford, Mass.
Everett H. Fuller,	Chemistry, Dyeing and Finishing,	Postgraduate, New Bedford Textile School.
Walter G. Hamlen, Jr.,	Chemistry, Dyeing and Finishing,	Color Chemist, E. D. Du Pont de Nemours & Co., Jackson Laboratory, Wilmington, Del.
Walter E. McGinn,	Chemistry, Dyeing and Finishing,	Color Chemist, Jennings & Co., Inc., 93 Broad Street, Boston, Mass.
Walter D. Pickard,	General Cotton Manufacturing,	Hopedale, Mass.
Arthur J. Robinson,	Chemistry, Dyeing and Finishing,	Pilot, Steamer "Sankaty," New Bedford, Mass.
Arthur H. Rönne,	General Cotton Manufacturing,	Private, 103d Regiment, Field Artillery, A. E. F., France.
Tsün S. Young,	General Cotton Manufacturing,	In China.

1917.

Certificate Courses.

Name.	Course.	Occupation.
Howard C. Amos,	Designing,	Designer, Lund Textile Company, Farnumsville, Mass.
Walter A. Brown,	General Course Subjects,	Overseer, Sharp Manufacturing Company, New Bedford, Mass.
Fred M. Dixon, Jr.,	Special,	In charge of the testing and conditioning departments, Aberfoyle Manufacturing Company, Chester, Pa.
George P. Few,	Cotton Yarn Preparation,	Jacksonville, Ala.
Don C. C. Lewis,	Cotton Yarn Preparation and Dyeing,	Lieutenant, U. S. S. "Algonquin," Navy Department.

1918.

Diploma Courses.

Louis H. Hahn,	Designing,	Assistant Designer, Bristol Mill, New Bedford, Mass.
Henry M. Jourdain,	General Cotton Manufacturing,	Postgraduate, New Bedford Textile School.
William H. Ogden,	Chemistry, Dyeing and Finishing,	Color Chemist, Jennings & Co., 93 Broad Street, Boston, Mass.
Burton C. Sylvester,	Chemistry, Dyeing and Finishing,	United States Finishing Company Bleachery, 33 Fifth Street, Norwich, Conn.
Nicholas R. Vieira,	Chemistry, Dyeing and Finishing,	U. S. N. R. F.
Fook W. Wong,	General Cotton Manufacturing,	Postgraduate, New Bedford Textile School.

Certificate Courses.

Molly N. Gammons, ...	Designing, ...	Designer of Cotton Fabrics, Manville Company, Providence, R. I.
Dan E. Greene, ...	General Course Subjects and Knitting, .	Grocer, Millville, Mass.
Ellsworth S. McEwen, . . .	Cotton Yarn Preparation and Knitting, .	Cotton Salesman, C. O. Foster & Co., 23 North Second Street, New Bedford, Mass.
Theodore P. Morris, ...	Cotton Yarn Preparation, ...	Attending New Bedford Textile School.
George W. Weller, Jr., ...	Cotton Yarn Preparation and General Course Subjects.	U. S. N. R. F.

REGISTER OF EVENING GRADUATES WHO HAVE RECEIVED DIPLOMAS.[1]

1904.

Name.	Course.	Occupation.
Amos E. Hammond,	General Cotton Manufacturing,	Present address not known.

1906.

George Winterbottom,	Carding and Spinning,	Present address not known.
Jim Green,	Designing,	Present address not known.

1907.

William Acomb,	Designing,	Designer, Gosnold Mills Company, New Bedford, Mass.
Adelard J. LaChapelle,	Designing,	Designer, Neild Mill, New Bedford, Mass.
Victor O. B. Slater,	Designing,	Textile Expert, United States Bureau of Aircraft Production, Saylesville, R. I.

Section of Machine Shop

1908.

Philip C. Holmes,	General Cotton Manufacturing,	Clerk, Grinnell Manufacturing Corporation, New Bedford, Mass.

1912.

Hughes L. Siever,	Chemistry and Dyeing,	Chemist, Crucible Steel Company of America, 381 Congress Street, Boston, Mass.

1914.

John M. Baldwin,	Chemistry and Dyeing,	With E. E. Taylor Company, New Bedford, Mass.
Wright Bolton, Jr.,	Chemistry and Dyeing,	Master Mechanic, Acushnet Mill Corporation, New Bedford, Mass.
John M. Palmer,	Chemistry and Dyeing,	Commercial Representative, Business Training Corporation, New York City.

1916.

John F. Hagen,	Carding and Spinning; also Weaving and Designing.	Assistant Superintendent, Mobile Cotton Mills, Mobile, Ala.
John A. Mellor,	Weaving and Designing,	Designer, Soule Mill, New Bedford, Mass.
Norman M. Paull,	Chemistry and Dyeing,	Engineer, Care of Superintendent, Engineering Department, Camp Humphreys, Va.
E. Gilbert Peterson,	Chemistry and Dyeing,	In navy.

[1] See note, p. 103.

1917.

Name.	Course.	Occupation.
James Bolton,	Carding and Spinning,	Machinist's Mate, United States Navy.
William E. Parker,	Carding and Spinning; also Weaving and Designing.	Assistant Superintendent, Acushnet Mill Corporation, New Bedford, Mass.
William Sharples, Jr.,	Weaving and Designing,	Loom Fixer, Gosnold Mills Company, New Bedford, Mass.
Anthony R. Silvia,	Weaving and Designing,	Loom Fixer, Gosnold Mills Company, New Bedford, Mass.

1918.

Frank Holden,	Carding and Spinning,	Second Hand, Nashawena Mills, New Bedford, Mass.

NOTE.

The evening school diploma is given when an evening student has completed a course equal to the work required for a day diploma course. Certificates are granted when an evening student has completed a course of two years, two nights a week.

The following other men were students in the day classes for one or more years, and for various reasons were obliged to leave before graduation, many of whom are holding excellent positions in the various industries, many of them in the textile industry: —

Mott Allen.
Allan Barrows.
Harold L. Bliss.
George L. Branscomb.
John G. Brown.
Charles H. Brownell.
Milton L. Brownell.
Theodore W. Cole, Jr.
Walter C. Dexter.
Harold G. Dolliver.
Harvey A. Ellis.
Louis R. Foster.
Carle H. France.
Percy G. Kammerer.
Joseph A. Kasmire.
Herman A. Kattermann.
James F. Kinney.
Joseph F. Knowles, Jr.
Eugene M. Leman.
Benjamin M. Long.
John J. McAuliffe, Jr.
Albert H. McAuslan.
Charles J. Mooney.
George L. Olivier, Jr.
Francis A. Parker.
Ralph F. Purrington.
Albert Putz.
Arthur P. Rogers.
Ernst C. Sherman.
Edwin W. Shore.
Ralph A. Sisson.
Carlton M. Smith.
George M. Stafford.
Genfong A. Sun.
Charles R. Swift.
Jireh Swift, 3d.
Ray B. Taber.
A. Archer Taylor.
Robert G. Tichon.
Thomas Tillinghast.
Walter A. Trow.
John H. Tynan.
John R. White.
Waldo L. Whitmarsh.
Tsun-kwei Woo.
Leo Zass.

NEW BEDFORD TEXTILE SCHOOL

New Bedford, Mass.

APPLICATION BLANK FOR ENROLLMENT IN DAY CLASSES

I hereby make application for admission to the day classes of the New Bedford Textile School.

Date_____19____

Name in full_____

Age last birthday_____

Home residence_____

Name of parent or guardian_____

Name of school last graduated from_____

State in what way you first learned of the school_____

_____

Mark X Against Course Desired

General Cotton Manufacturing Course
Designing Course
Chemistry and Dyeing Course
Carding and Spinning Course
Seamless Hosiery Knitting Course
Latch Needle Underwear Knitting Course
Special Course in

The above application should be filled out and mailed, or delivered, to

THE NEW BEDFORD TEXTILE SCHOOL
New Bedford, Mass.